DOMESTIC ENGINEERING

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BUSINESS MEN IN POLITICS.

CITIZENS engaged in business and having interests, large or small, should take a genuinely active part in politics. This is the urgent recommendation made recently by several prominent figures in western industrial circles in discussing the merits and demerits of the threatened railroad strike.

This point of view appears to be entirely correct, since the welfare of the country is really dependent upon the prosperity and growth of its business interests. Few laws are enacted that do not, in some way, affect the status of business and industry.

From time immemorial, lawyers and politics have been synonymous, and while it is true that some very constructive laws have been passed as a result of the lawyer's influence in legislative bodies, yet there is no doubt that some measures of a very destructive tendency have also been put upon the statute books.

In order to counteract the ever present influence of the lawyer in politics, it has often been urged that the business man should be more largely represented in state and national legislative bodies.

From time to time, business men, including those of the plumbing and heating trades, have found occasion to complain of oppression and, what they have reason to call, unjust and radical measures.

Each law which was felt to be oppressive found its way to the statute books of the country through the neglect of those business men whose interests were at stake.

Had organized labor shown the same lukewarmness, the same lack of interest, not one of the great measures in its behalf would have been enacted by Congress or by state legislatures.

It appears that organized labor can find time to think about and to take an active part in politics, especially such as will affect its cause, while those whose money operates, and whose brains direct business concerns, great or small, may think, but do not act—collectively or effectively.

Measures which are detrimental to business will continue to be passed, unless busines men take the initiative and protect their interests by concerted political action.

It has been stated that in Congress, the number of members, who have had any extensive business experience, is very limited, while the number, who have an ambition to make themselves notorious by introducing extreme and injurious measures, is quite large.

In many sections of the country, the path to political glory and preferment is to be found in the practice of "fighting the interests," and in shouting about "predatory wealth," "trusts," etc.

While it is certainly true that many business men have not sufficient time or adequate capital to devote to an active and personal participation in politics, yet that fact in itself should not have enough weight to keep them entirely out of politics.

It is hardly to be expected that every other business man should become a legislator or a ward boss, but, in the interests of self protecion, all buiness men should be expected at least to take a more personal interest in the selection of legislators who will properly represent them in the framing of the state's and the nation's laws.

If there were more business men in politics and fewer lawyers and professional politicians, there is no doubt that better laws and stricter enforcement of them would be the rule.

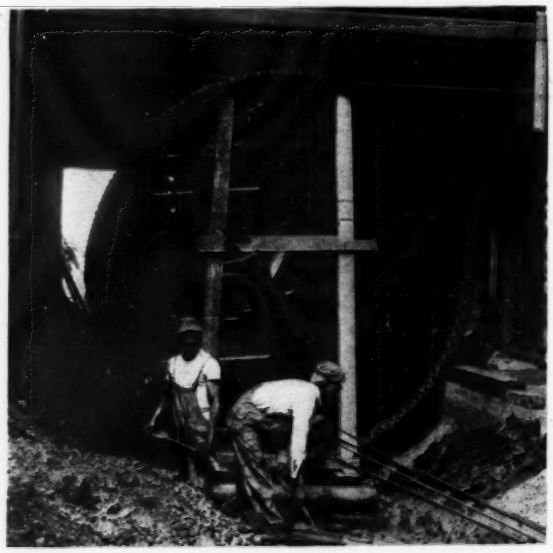
The Heating System in the New Cicero-Stickney High School at Cicero, Ill.

Two Huge Boilers Weighing Thirty-Three Tons Each and of Three-Hundred Horsepower Are Used in the Installation. All Radiators are on Concealed Brackets

THE Cicero-Stickney High School which is nearing completion at Cicero, Ill., will be one of the most modern and attractive institutions of its kind in the Middle West.

Two of the largest power boilers which have been shipped into the state within recent years are being installed in the school. The boilers are of steel construction, each weighing thirty-three tons and measuring eleven feet and six inches in diameter. The boilers are designed for a working pressure of 160 pounds above atmospheric pressure and have a capacity of 300 horsepower.

Considerable difficulty was experienced in transporting these boilers from their place of manufacture to their destination at Cicero, the boilers being so large they could not pass under railroad bridges. They had to be re-routed in order to facilitate transportation.



Moving One of the Boilers Into the Cicero-Stickney High School by the Aid of Cables.

The boiler shells are 1⅛ inch in thickness. The horizontal seams on the inside and outside cover plates are butt-strapped and triple-riveted, while the circular seams are double riveted. The boilers are known as internal fire return tubular boilers of the Scotch marine type. Each boiler will be equipped with two corrugated furnaces with an internal diameter of 50 inches, and made from ⅞-inch steel.

Each boiler will be provided with flanges, openings, etc., as follows: One 5-inch steam nozzle, one 5-inch valve nozzle, one 2-inch feed inlet with brass feed pipe, one 10½ by 16-inch man head, located in the top of the shell, two 4 by 6-inch handholes, located in the front sheet below the tubes, two 10½ by 16-inch man heads, located one on each side of the shell, one 2½-inch flange in the bottom of the shell for blow-off connections.

The boilers are set in cast iron cradles resting upon a concrete foundation which extends to a depth of two feet below the boiler room floor level. The boilers are being installed as close to the floor as possible, permitting the bringing out of blow-off connections.

Radiation.

Throughout the new building there is 9,000 feet of radiation. All radiators, either of the regular standard type or the wall type, are without legs and are being hung on the wall at a standard height for each unit. Each radiator is supported by four concealed brackets, two at the top and two at the bottom. These brackets were installed before the building was plastered.

Piping.

All the steam piping, which is subject to boiler pressure, is of extra heavy construction and put together with extra heavy cast iron flanges, fittings and valves. All high-pressure steam piping which is 4 inches and larger is flanged and all piping smaller than 4 inches is screwed, with flanges at reasonable intervals to facilitate future repairs. Where the piping passes through the floor or ceiling, iron sleeves of the approved type are used, with all the necessary ceiling and floor plates of approved make. In the case of piping which passes through the walls, steel pipe of sufficient size to allow for expansion is used.

The feed piping is of 2-inch brass, put together with extra heavy cast iron fittings. Connection is made from the feed pumps to the feed water heater, and from the feed water heater to each of the boilers. The branch discharge which is connected from each feed pump is provided with a gate valve. The feed line previous to connection with the feed water heater is being provided with an extra heavy swinging check valve. The branch to each boiler is being provided with a gate valve, a check valve and an angle valve, all of which are extra heavy.

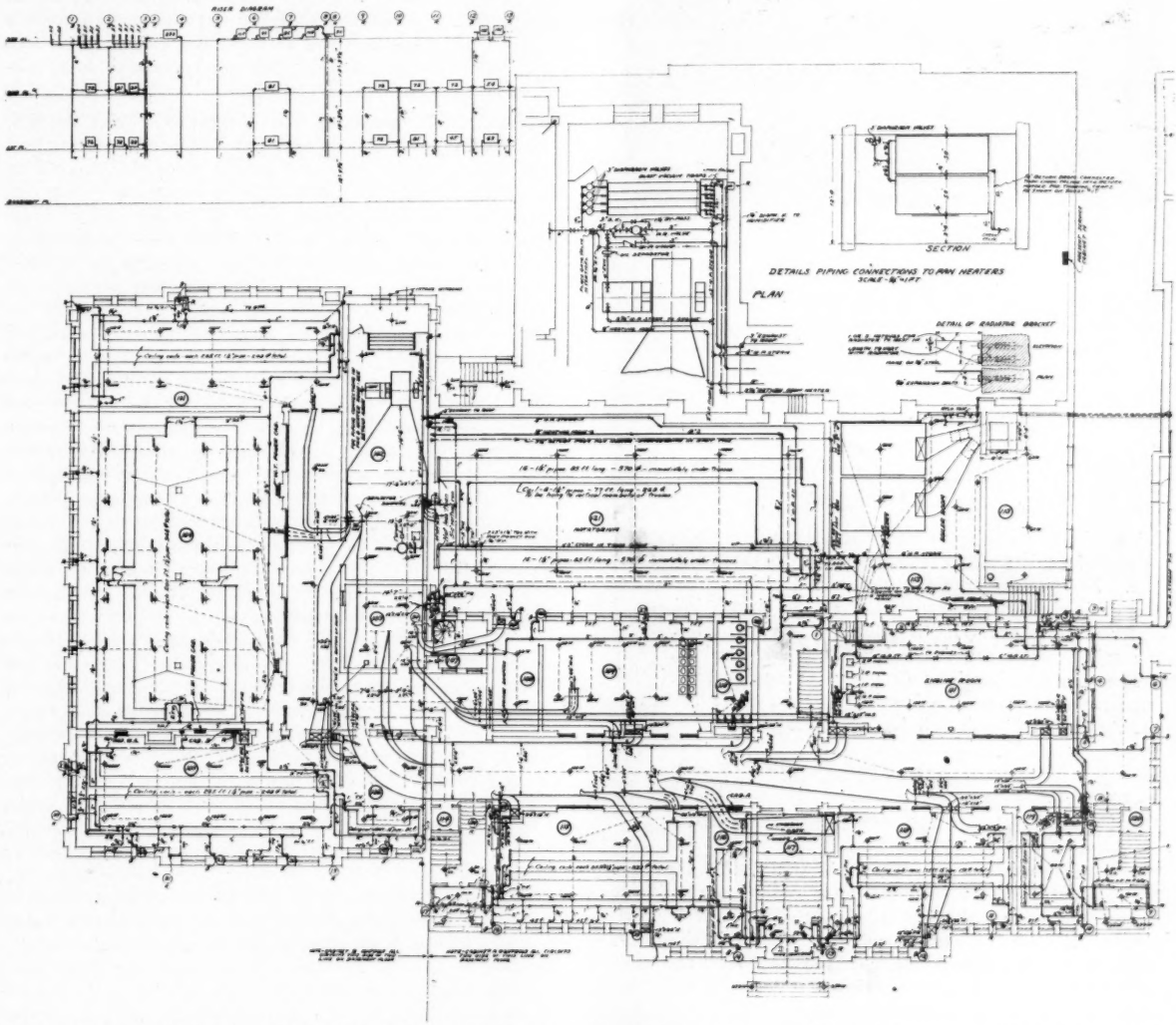
High-Pressure Piping.

Beginning at the boilers, 5-inch branches with valves are connected with the 6-inch high-pressure line in the boiler room, where a 5-inch automatic stop and check valve is placed on each boiler. From this 6-inch line, a complete 6-inch loop is carried around the engine room and back into the boiler room. A 3-inch high-pressure line is carried through the natatorium room into the fan room where connections are made to the fan engine and the reducing valve. Another 3-inch line is carried from the loop in the engine room to the 3 by 6-inch reducing valve in the boiler room of the old building.

A 4-inch and 5-inch branch connect with the vertical steam separators running to the electric power plant engines.

High-Pressure Drains.

Two high-pressure drains are provided, one being 1 inch and taken from the bottom of the "T" where the connection is made between the boilers and the loop in the boiler room, while the other drain is 1 inch and taken from each of the steam separators of the engines. Each of these high-pressure drains are brought to an extra heavy receiver, about 30 inches in diameter, the said receiver being located on the west wall of the boiler room.



Part of the Basement Plan of the Cicero-Stickney High School, Showing Arrangement of Piping, Location of Engine Room and Natatorium, Riser Diagram and Details of Piping Connections to Fan Heaters.

The receiver is drained by a 1-inch steam trap with by-pass valves which discharge into the return tank. Each of the drains are provided with an angle or gate valve immediately adjacent to the point of drainage.

Exhaust and Low-Pressure Piping.

Beginning at the exhaust outlet of each of the two electric power plant engines, the full-sized exhaust with exhaust valves is carried in a trench, and connections are made to the main 6-inch exhaust line in the trench.

This exhaust line is running through the boiler room where an 8-inch separator of approved type is installed. This separator is drained with the necessary valves through a 1-inch balanced valve trap into the drain tank. This trap is installed for draining the 6-inch exhaust line where the same rises in the boiler room, the trap discharging into the drain tank. There is also installed a horizontal back pressure valve of approved make. The exhaust line is extended through the roof of the boiler room up along the side of the building to a height of 8 feet above the roof, and is capped with a cast iron exhaust head, which is provided with a 1-inch drain connected with the drain tank.

A 4-inch exhaust line with valve is carried from the fan engine through the 4-inch horizontal oil separator, thus making a 4-inch connection with the valve to the low-pressure piping in the fan room. A 3-inch exhaust line for the engine is running through the horizontal back pressure valve, this connection extending up through the roof of the natatorium to the roof of the building.

A 5-inch heating main is carried from the boiler room through the engine room and around the west wall of the building. Connections are made to all direct radiators and the main portion of the building. All risers which have radiators connected thereto without separate return are equipped with a drip pipe in the bottom of the riser.

The ends of all steam supply lines running to the direct radiation are provided with drains into the return lines. This provision is also made in any parts of the steam supply lines in which pockets are formed.

Return Piping.

All the return piping from the direct radiation is termed "vacuum" returns. No water pockets are permitted, as the airing out of the direct radiation is secured through

Overhead Coils and Heating Main in the Natatorium of the Cicero-Stickney High School.

these returns into the vacuum pump. All of these returns are carried as high as permissible and at the same time in a manner to secure proper drainage. The return line from the fan coils is running along the wall of the fan room and from thence it passes underground under the floor of the natatorium into the boiler room where connection is made with the vacuum pump. The underground portion of the return line is carried in 6-inch split tile.

On each unit of radiation there is installed a vacuum valve. Where drips are necessary there is installed drip valves of various sizes which connect to the main return line. Each one of the 8 sections of the fan coil heaters are drained through traps of different sizes. Wherever water pockets occur in the steam pipes in the basement, the said pockets are drained through drain valves.

The Phillips-Getschow Co., heating engineers, of Chicago, are installing the heating system. The architects are Ashby, Ashby & Schulze, of Chicago.

LEGAL DECISIONS.

Plumber's Helper Injured in the Course of His Employment.

A general workman, a plumber's helper, left the shop of his employer to go a distance of about four miles to do some work at the house of a customer of his employer. He left the house at about 5 o'clock in the afternoon, with a horse and wagon of his employer, to return to the shop. He was seen driving on the highway apparently in a normal condition, by a man who five minutes later came upon his body lying in the roadway to the left of the wheel tracks. He was taken to a hospital, where he died the next morning. The industrial accident board ordered a payment of $2,025 to the widow, which the superior court approved. But the Supreme Judicial Court of Massachusetts holds, in re Sanderson's Case, 113 Northeastern Reporter, 355, that the decree of the superior court must be reversed and a decree entered declaring that the dependent was not entitled to compensation. The supreme judicial court says that it is plain that the injury was received while the employe was engaged in the regular work which it was his duty to perform and so was received "in the course of his employment," within the meaning of the workmen's compensation act. The more difficult question was, Did the injury arise out of the employment under the same section of the act? The industrial accident board found that the injury arose out of the employment. The burden of proof rested upon the dependent to prove the facts necessary to establish a right to compensation under the act. After a careful examination of the evidence presented to the committee of arbitration and to the industrial accident board, all of which was reported, the court is of the opinion that the dependent failed to sustain the burden of proof by showing that the employe received an injury which arose out of his employment and that resulted in his death. It might be that the dependent was correct in her contention that the death of the employe was due to a fall from the wagon, but other theories and conjectures were quite as probable.

Liability of Corporations For Slander by Their Agents.

It seems to be a well-established rule that a corporation is responsible for the torts or wrongful acts of an agent or servant committed in the course of his employment and while engaged in furthering the business of his principal or master, and that a libel published by an agent or servant falls within the rule. But on whether a slander spoken by an agent or servant is governed by the same rule, or by a different one, the authorities are conflicting. Several courts, as apparently in Alabama, Georgia, Kentucky, Massachusetts and Michigan, make a distinction between libel and slander, and hold that a corporation may be responsible for the publication, by its agent, of a libel which it neither authorized nor ratified, but is not responsible for the utterance of a slander by such agent, unless it expressly authorized or ratified the defamatory utterance. Other courts, to a greater or less number, hold that there is no sound distinction between liability for libel and liability for slander; and take the position that a corporation is responsible for a slander uttered by an agent to the same extent that it would be for a libel published by such agent, or for any other tort committed by him. And the courts which hold that a corporation is not liable for a slander uttered by its agent, unless it had expressly authorized or approved such utterance, concede, as a thoroughly established modification of that rule, that where the relation between the corporation and the person aggrieved created a duty on the part of the corporation to see that such person did not suffer injury or indignity, as in the case of carrier and passenger, merchant and customer, and the like, it is liable for defamatory statements made by its agent or servant, even if made contrary to express instructions. So says the Supreme Court of Minnesota, in Roemer vs. Company, 157 Northwestern Reporter, 640, where it holds, for that state, that the liability of a corporation for a slander uttered by its agent is governed and determined by the same rule which determines its liability in case of a libel published by such agent, and it is responsible for a slander uttered by such agent in the course of his employment and while engaged in furthering the business of the corporation. But the court thinks that a verdict for $3,000, in favor of the plaintiff, who had been charged with embezzlement by an accountant employed by the defendant, was so excessive as to indicate that it was given under the influence of passion or prejudice by the jury.

Still.

Tradesman (who has been at the telephone for a quarter of an hour, to his apprentice)—"Here, William, take the receiver, as long as my wife is talking to me. You don't need to make any reply; only when she asks, 'Are you still there, James?' say, 'Yes, Amelia, dear.'"—Liverpool Globe.

Water Supply to Dwellings and Large Buildings

Notes on the Installation of Corporation Cocks and Water Service Piping to Dwellings and Large Buildings. What Plumbing Codes in the Different Parts of the Country Require

By JOSEPH GRAHAM

Continued from Page 154 in the July 29th Issue.

THE customary manner of making small water service pipe connections to a street main is by drilling. After the operation of drilling is ended, the street main is tapped with a pipe thread, which receives the corporation cock with which the water service pipe is connected.

In some cases, the corporation cock is driven into the main, after the main has been drilled, where the pressure is low.

Fig. 1 shows a heavy brass, round-way, corporation cock, which is provided with a 45 degree ground joint, bent coupling wiped to a double extra heavy lead pipe 24 inches long and with an extra heavy brass soldering nipple wiped to the other end of the lead pipe. The nipple is fitted with an increase of size of connection specified for building.

The water department generally determines the size of the corporation cock. Three-fourths inch is the largest size tap usually allowed by water companies.

Where a larger service pipe is required, it is customary to employ a special fitting in connection with the street main, such a fitting is usually employed with a service pipe over 2½ inches in diameter and where the street main is of moderate size. A fitting of this nature, consisting of a manifold of galvanized iron with side opening of the same size as the connection specified for building, is shown in Fig. 2. This is employed where more than one cock is called for, the soldering nipples being 1 inch. Or a number of separate service connections may be employed.

The size of the corporation cock, however, has nothing to do with the diameter of the water service pipe. The size of the water service pipe depends upon several factors, such as the pressure, the number of persons in the building, etc.

The water service connections are generally either lead or galvanized iron, brass, tinned on the inside, being used on rare occasions. While lead is preferable in some respects for street connections, it should be either "AA" or "AAA".

Where galvanized iron pipe is employed for service con-

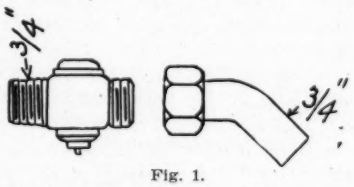


Fig. 1.

nections, it should be painted on the outside for protection against corrosion, when laid in the earth.

The service pipe connection should not be made too rigid, since there is always danger of settlement, which might cause the connection to break. In order to obviate this danger, where the service joins the tap the lead pipe is usually formed into a loop or bow. In cases where iron pipe is employed for service, it is customary to insert between the tap and iron pipe a short length of lead pipe. Where this is not done, a loop of iron fittings is employed.

The correct method of connecting a galvanized iron water service pipe to a corporation cock in a street main is shown in Fig. 3. That part of the pipe which is curved between the corporation cock and the pipe M is made of lead. The lead pipe is connected to the iron pipe, M, by means of a brass soldering nipple. It is connected to the corporation cock by

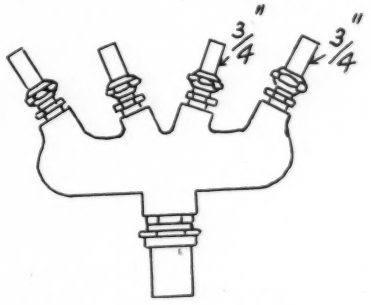


Fig. 2.

a ground coupling and ring, or union. This method of installation gives the pipe a chance to spring and obviate the danger of breakage at the main.

In cases where an extremely large water service pipe is required for a building and the corporation cock is inadequate to meet the demand, a number of corporation cocks may be connected to the main, and from thence extended to connect into the iron pipe branch. The branches from the corporation cocks are run at an angle of 45 degrees. It is important that these branches should be so run that the flow of water in each will be independent of any of the others. In order that the water service pipe shall be able to have a full capacity of flow, it is customary to have the sectional area of the service pipe a little smaller than the sectional area of the branches. This is done to allow for friction of water flowing through them.

It is customary, where it is desired to have an uninterrupted supply of water, especially in hotels, office buildings, etc., to install two water services, which are taken out of two different street mains.

In such cases, the services are made of sufficient size so that either will be able to furnish an ample water supply to the building independently of the other. The supplies are cross-connected and so arranged that they may be interchangeable.

It is interesting to note the requirements in different cities in reference to the material and size of water service pipes from the main to the curb line or inside of the building.

Standard weight drawn lead pipe or cast iron pipe coated is required at Washington, D. C., and Jacksonville, Fla. "A A A" lead pipe is specified at Little Falls, N. Y.

Lead, brass, copper or galvanized iron is required at

Buffalo, N. Y.; brass, galvanized iron or "A A" lead pipe at Newburgh, N. Y.; "A" lead pipe or best lap-welded iron at Oswego, N. Y.; strong or extra strong lead, galvanized iron or brass at New Orleans, La.; galvanized iron, lead or brass at Seattle, Wash.; galvanized iron, extra strong lead or brass at Greensboro, N. C.; extra heavy lead pipe, Joliet, Ill.; extra heavy lead pipe,

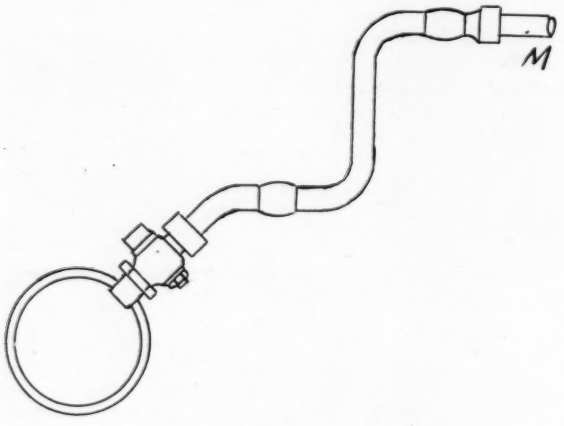


Fig. 3.

except galvanized iron may be used by special permission, at Sioux City and Des Moines, Ia.

Salina, Kan., requires domestic service pipes from water mains to curb to be galvanized iron; Houston, Tex., specifies lead or galvanized pipe for the same purpose.

Butte, Mont., requires service pipes to be of lead up to and within the area walls or inside the building; "A A" lead pipe is required at Jersey City, N. J.

Fort Smith, Ark., requires water service pipes having 1½-inch water way or less to be lead between the corporation cock at the main and the stop cock at the curb; pipes having greater water way are galvanized or cast iron.

At Denver, Colo., the service pipes from sizes ½-inch to ¾-inch are extra strong lead; service pipes from 1 to 2½ inches are lead, double extra strong.

The size of the water service pipe is ¾-inch from the tap in the main to the building line at Washington, D. C.; Atlantic City, Jersey City, Gloucester, N. J.; Somerville, Mass.; Buffalo, N. Y.; New Orleans, La.; Dallas, Tex., and Salina, Kan.; ½-inch pipe is specified at Newburgh, N. Y.

In New York City the requirements for street service pipes are ¾-inch pipe for dwelling and tenements occupied by six families or less; one-inch for tenements or apartment houses occupied by more than six families; and 1½-inch for hotels, factories, and other miscellaneous buildings. But, in no case, can the diameter of the service pipe be less than the diameter of the tap.

(To be continued.)

Safety in Numbers.

"I have here," said the agent, "a utensil that no housekeeper can afford to be without."

"What is it?" asked the woman at the door.

"It's a combined corkscrew, can-opener, pocket-knife, screw-driver, tack-hammer, glass-cutter, and—"

"Hold on a minute. I don't want one of those things."

"Why not?"

"By keeping all those tools separate it is impossible for my husband to lose more than one at a time."—Birmingham Age Herald.

DOMESTIC ENGINEERING.

What the Young Science, Domestic Engineering, Is Doing.

Domestic Engineering covers the scientific arts of plumbing, lighting, heating, ventilating and cleaning. These are not fine arts in the technical sense; they are much more important, for it is the model residence which they conspire to feature, writes Arthur M. Corwin, A. M., M. D. in "The Morad."

Given floor, walls and roof, how shall we make them superlatively habitable? The modern lighting system illuminates the situation at once with its refinements of electric fixture switch and alluring color scheme. The oxygen which the old gas jet used to consume is now saved to the human consumer, and geraniums in the winter windows hold up their heads on sturdy stalks and laugh in rich greens and blossoms, all because growing plants do not like the effect of illuminating gas. They have good sense.

The old stove, with its leaky flue and coal gas odors, has to give large place to hot water and steam, which with modern ingenuity have overcome the excessive dryness which they used to give to indoor atmosphere. At this the window plants rejoice again in the only way they know how to rejoice—by thriving exceedingly.

To make things more complete, the up-to-date ventilating plant lets in a supply of fresh, filtered air, and vacuum cleaners suck up the dirt and dust that happens in or makes its studied entrance on the feet and clothes of men.

Seton Thompson said: "Half of our diseases are in our heads and the other half in our houses." But this was before the days when the young science of domestic engineering rolled up its sleves to renovate and warm and light and ventilate and put the finishing touches upon comfort and health by installing a perfect plumbing plant.

Under the reign of this new science and art, surely men have a chance for better leisure, finer culture, better health, greater peace and greater efficiency. Surely the family within the domicile is destined to be a firmer unit of a more enduring state.

Men used to joke about the bills of the plumber but with "sanitary" prefixed to his title this wiper of joints has made good his right to charge for services that are now expert. The householder is glad to "pay the freight." To throw a monkey wrench into the machinery is a phrase expressive of the ways of the obstructionist. To adjust that wrench to the fittings of a perfect system of domestic harmony is the work of the skillful plumber.

The domestic engineer holds a high place among those professional gentlemen who labor to harness the forces of nature to the service of mankind.

Into this scheme of things how much more easily enter the pictures, the books, the harmonies of music, the hospitalities and all the beauties of those other arts that make a home a place ideal in which to live.

PUBLIC COMFORT STATIONS.

Two new public comfort stations, one in Cliff Park and one in Exall Park in Dallas, Tex., will be built this fall. The contracts will be awarded in the near future.

Sites for three new comfort stations in Cleveland, O., were selected last week by Public Service Director Alexander Bernstein. One will be located at the southwest corner of Clark Avenue, S. W. and W. 25th Street, another at the Denison Avenue and Fulton Road, S. W., entrance to Brookside park, and the third at the southwest corner of West 14th Street and Abbey Avenue, S. W.

System of Accounts for Retail Merchants

Prepared and Published by the Federal Trade Commission
under the Direction of Edward N. Hurley, Chairman

For master plumbers and master steamfitters whose systems or accounts are not well planned or do not give full information at all times, as to the condition of their business, a careful study of the following system will be of great assistance in installing or adopting a reliable bookkeeping system, and the Federal Trade Commission deserves great credit for giving so much useful information in condensed form and comparatively small space.—Editor.

Introduction.

THERE is a tendency among retail merchants to conduct their businesses without an adequate system for determining their costs. This condition carries with it various undesirable results. In the first place, the merchant is unable to price his goods intelligently and conduct his business upon sound business principles. In the second place, he is unable, when seeking credit, to produce a correct statement of his financial condition which would enable a banker to extend to him the full credit to which he is entitled. He thereby limits the possible expansion of his business.

There are several forces at work which compel the retail merchant, if successful, to keep books, and the better and more comprehensive his methods the greater chance he has of being successful.

The first of these forces is, of course, competition, which at times compels him to make close prices. The second, and one of vital importance, is the attitude of the banks regarding the granting of credit. Banks are paying more and more attention to the accounting methods used by the merchant to whom they extend credit. They are willing to give larger loans and very often more liberal terms to the merchant who keeps his books in a way that enables him to show the bank at any time just how his business is progressing. A merchant who can show progress will undoubtedly receive more consideration with the same amount of assets than one who cannot. Even if he is successful but cannot show it because of his bookkeeping methods, the bank will not consider him a desirable credit risk.

Another very important point to which the bank gives consideration is whether the prospective borrower is making proper provisions for depreciation on stock, buildings, and fixtures, and his books should be so arranged as to show the amount of these provisions. No merchant can be said to be managing his business properly unless adequate provision is made for depreciation.

The system of accounts outlined in this bulletin has been devised to meet the requirements of retail merchants. The aim has been to devise the least involved system which will give the information essential to successful management. The best system of accounts for any business is one which furnishes the information required with the least effort.

The value derived from an adequate system of accounts is obvious. The greatest value is that of making comparisons and analyzing differences. But before any fruitful comparison can be made between figures of different periods or between figures of different stores, it is absolutely necessary that the systems be uniform. With a uniform system of accounts in use, differences in items reflect differences in conditions, while without a uniform classification, differences in items may reflect only differences in accounting classification.

In order to maintain the simplicity of the system, no departmentalization of the accounts is provided for, but any concern operating distinct departments can readily adjust the system to show the results obtained in each department.

A merchant, in order to price his goods properly, must know his overhead expenses. With a proper arrangement of his accounts the percentage of overhead may be readily obtained. Goods not priced high enough to cover this percentage are actually sold at a loss. The most convenient way of arriving at the proper percentage to add to the first cost of goods for overhead is to use the average ratio of operating expenses to net sales covering a past period. For instance, if a merchant's annual sales for the last fiscal year were $25,000 and the expense of conducting his business was $5,000, his overhead was 20 per cent. By adding the desired percentage of profit on sales to this overhead percentage, and deducting from 100 gives the percentage of invoice cost to selling price. The invoice cost of an article divided by this percentage gives the selling price.

The rapidity of the turnover is a very important element in conducting a retail business. It is obvious that an increase in turnover goes hand in hand with an increase in profit. A slow turnover may be due to poorly selected stock, to overstocking, or to an inefficient selling organization. No effort should be spared to increase the turnover to its maximum. To ascertain the turnover divide the cost of goods sold during the year by the cost of the average stock carried.

Books of Account and Statements.

To operate the system of accounts here outlined requires but four books of account, namely, journal, general cash book, invoice book, and ledger. Sales tickets and credit tickets are used for recording sales and sales returns.

From these books certain statements, particularly a monthly summary of business, a profit and loss statement, and a balance sheet, should be prepared at definite periods in order to present the results in comprehensive form.

Journal.

The ordinary two-column journal can be used. The opening entry is an inventory of the assets and liabilities.

The totals of the charge sales, as shown by the charge tickets, should be entered in the Journal, debiting Accounts receivable, and crediting Sales. The totals of the credit tickets are also entered in the Journal, debiting Sales with returns and Sales Allowances with price concessions and crediting Accounts Receivable.

Transactions which do not go through either the Cash Book or Invoice Book should also be journalized. These entries comprise such items as notes receivable and payable, allowances or corrections of purchase invoices after entry in the Invoice Book, the various adjusting entries at the end of the month, and the closing entries at the end of the fiscal period.

Journal entries affecting trade customers' and trade creditors' accounts will also have to be posted, respectively, to Accounts Receivable account and Accounts Payable account.

General Cash Book.

This book is for recording all cash transactions. The left hand, or debit side is for recording receipts, and columns should be headed as follows, in the order named: Date, Name of Account, Description, Ledger Folio or LF, Collections on Accounts Receivable, Cash Sales, and General Accounts. The right hand, or credit side, is for recording payments, and these columns should be headed: Date, Name of Account, Description, Check Number, Ledger Folio or LF, Discount on Purchases, Payments on Accounts Payable and General Accounts.

The total cash receipts of each day should be deposited daily in bank and all payments should be made by check. The total of cash sales for the month should be checked against the total of cash sales tickets, and is then posted to the credit of "Sales," that of the "Collections on Accounts Receivable" to the credit of "Accounts Receivable Account," and that of "Payments on Accounts Payable" to the debit of "Accounts Payable Account." The total of the Discount on Purchases column is also posted to the debit of Accounts Payable.

All payments for expense items other than petty cash should be entered on the cash book as made and posted therefrom to the proper accounts. At the end of the month all expense bills for the month should be paid, so as to insure the expense being charged in the proper month.

Petty cash disbursements, such as car tickets, telegrams, and such minor items for which it is not expedient to draw checks, should be handled as follows:

A check should be drawn for an amount sufficient to cover petty disbursements for a definite period. At the end of the period the cashier should prepare his petty cash statement, which should be supported by vouchers, and a check drawn for the exact amount of the statement, thereby restoring the petty cash fund to the original amount. This check should be entered in the cash book in the regular way, charging the various expense accounts as shown by the petty cash statement.

The balance of the general cash book at all times should check with the balance as shown by the check book plus the amount advanced for petty cash.

In the check book keep checks and deposits footed separately. When the bank book is balanced, check up the bank list, then rearrange the checks in numerical order, and check with the stubs. If any checks are outstanding, note them on the stub and deduct from total of checks drawn; the check book balance will then agree with the bank book balance.

Invoice Book.

This book contains the record of the invoices of purchases of merchandise only and should carry the following headings: Date of Entry, Date of Invoice, Number of Invoice, From Whom Purchased, Address, Ledger Folio or LF, and Amount of Invoice.

The postings are made direct from this book into the Purchase Ledger and the total amount at the end of the month carried to the debit of Merchandise Purchases and to the credit of Accounts Payable.

Where the business is departmentalized a more elaborate form of Invoice Book should be used, giving departmental subdivisions of purchases.

	Net Sales.			Buying expense.		Selling expense.			Delivery expense.		General expense.							Total Expense.	Per cent of Net Sales.
	Credit.	Cash.	Total.	Salaries and Wages of Buying Force.	Miscellaneous Buying Expense.	Salaries and Wages of Sales Force.	Advertising.	Miscellaneous Selling Expense.	Salaries and Wages of Delivery Force.	Miscellaneous Delivery Expense.	Management and Office Salaries.	Office Supplies and Expense.	Insurance on Stock and Store Equipment.	Taxes on Stock and Store Equipment.	Losses from Bad Debts.	Miscellaneous General Expense.	Rent.		
Jan.	$3,356.31	$1,301.65	$4,657.96	$25.00	$14.00	$177.33	$30.00	$3.75	$102.67	$8.08	$269.00	$22.03	$1.61	$2.50	$33.56	$26.79	$71.25	$787.57	16.9
Feb.																			
Mar.																			
Apr.																			
May.																			
June.																			
July.																			
Aug.																			
Sept.																			
Oct.																			
Nov.																			
Dec.																			
Total,																			
Per cent of Net Sales.																			

Form A.—For Monthly Summary of Business. Recommended by the Federal Trade Commission.

Sales and Credit Tickets.

The use of sales and credit tickets for recording sales and sales returns has become almost universal.

A sales ticket must be made out for every sale and the daily total of these gives the sales for the day. The cash sales tickets are checked against the cash received and the charge tickets to go to the bookkeeper. Credit tickets must be made out for credits to customers and these likewise go to the bookkeeper.

Ledger.

The accounts in the ledger should be arranged in the following order:

1. General accounts,
2. Accounts with trade creditors,
3. Accounts with trade debtors,

allotting to each class such space in the ledger as may be necessary.

The general accounts should be arranged in logical order. (See arrangement of accounts.)

Accounts with trade creditors and with trade debtors should be arranged alphabetically, using preferably a loose leaf ledger.

Where the volume of business permits, it is advisable to use three ledgers, a general ledger, a purchase ledger, and a sales ledger, keeping controlling accounts of the purchase ledger and the sales ledger in the general ledger.

Where only one ledger is used it should be divided into three sections corresponding with the above.

The balance of the purchase ledger and of the sales ledger, or of these sections of the ledger if only one book is used, must agree with the balances of the Accounts Payable account and of the Accounts Receivable account. The advantage of these controlling accounts is that the aggregate of accounts payable and of accounts receivable can be had at any time without listing the balances of the individual accounts.

									Per ct.	Per ct.
23	Sales					$1,659	96			
24	Less Sales Allowances					2	00			
	Net sales					4,657	96		.....	100.0
	Inventory of merchandise at beginning			$3,451	09					
25	Merchandise Purchases (cost delivered at store)			2,759	67					
				6,210	76					
	Deduct inventory of merchandise at closing	$3,062	17							
	Less Stock Depreciation	153	11	2,909	06					
	Net cost of goods sold					3,301	70		.....	70.9
	Gross profit from trading					1,356	26		.....	29.1
	BUYING EXPENSE.									
26	Salaries and Wages of Buying Force	25	00							
27	Miscellaneous Buying Expense	14	00							
	Total buying expense			39	00				0.8	
	SELLING EXPENSE.									
28	Salaries and Wages of Sales Force	177	33							
29	Advertising	30	00							
30	Miscellaneous Selling Expense	3	75							
	Total selling expense			211	08				4.5	
	DELIVERY EXPENSE.									
31	Salaries and Wages of Delivery Force	102	67							
32	Miscellaneous Delivery Expense	8	08							
	Total delivery expense			110	75				2.4	
	GENERAL EXPENSE.									
33	Management and Office Salaries	269	00							
34	Office Supplies and Expense	22	03							
35	Insurance on Stock and Store Equipment	1	61							
36	Taxes on Stock and Store Equipment	2	50							
37	Losses from Bad Debts	33	56							
38	Miscellaneous General Expense	26	79							
39	Rent	71	25							
	Total general expense			426	74	787	57		9.2	16.9
	Net profit from trading					568	69		.....	12.2
	INCOME FROM OTHER SOURCES.									
42	Interest	17	09							
43	Cash Discounts on Merchandise Purchases	6	55							
44	Rent income (net)	16	53							
45	Miscellaneous Outside Income	2	00			7	98			
	Total net profit					576	67			

Form B.—For Profit and Loss Statement. Recommended by the Federal Trade Commission.

Customers are charged with goods purchased direct from the charge tickets. These tickets are first listed, then turned over to the bookkeeper, who posts them to the debit of the proper accounts, listing the amounts as he posts, then comparing his total with that of the first list, which must agree. Credit entries for allowances, reductions, cash discounts, or returned goods, are made from credit tickets in exactly the same manner.

Posting to the ledger, therefore, must come from one of four sources—the cash book, the journal, the invoice book, or the sales and credit tickets.

Monthly Summary of Business.

This record, Form A, will be found very useful for monthly and yearly comparisons of expenses and ratios. It is arranged with columns for sales, both cash and credit and total, and for the various expenses of the business. The figures on this statement are taken from the ledger.

Each month the figures for that month should be added to the previous total so that the record will give the totals from the first of the year to date as well as the monthly totals.

Profit and Loss Statement.

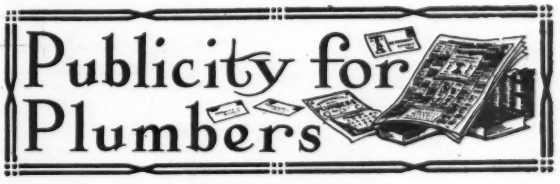
The amounts for making up this statement, Form B, can be had from the ledger and from the trial balance. It is made up at such times as the inventory is taken. A physical inventory should be taken at least once a year. The basis should be cost with conservative deduction for obsolete and shelf-worn goods. The inventory at the beginning of the period is, of course, that brought down from the end of the last period.

When monthly profit and loss statements are desired, and where the percentage of overhead and profit is known, the approximate cost of the goods sold can be arrived at in the following manner: Deduct the percentage of overhead and profit from 100 and multiply by the amount of the net sales; the result will be the cost of the goods sold, which, when deducted from net sales will give the approximate gross profit on sales.

If desired, the difference between the values placed on the inventory and the actual cost of same can be shown on the statement. Show the actual cost of inventory, and then the deduction under the title "Stock Depreciation," carrying the net forward as illustrated. While this is not necessary it is valuable information and this method is recommended.

The total net profit as shown by the statement is that carried to the credit of the proprietor's account in the ledger.

(To be continued.)



Display's the Thing.

The plumber who wants to get into the merchant class must know how to display his goods. That is fundamental. The same stock in one store will look unattractive and featureless, and in another will stick out like the proverbial sore thumb. It's all a matter of display.

Nothing succeeds like success; people like to patronize the successful establishment. And the thing which gives the appearance of success, like a well-groomed appearance with an individual, is to have plenty of the stock in evidence. The people who see it are bound to realize that the plumber has the courage of his convictions, and believes in his proposition to the extent of putting his own money into it. And besides, the man with the stock is also the man with the service.

One of the leading plumbers in a Middle Western city has always had a lot of the gas heater business of his community, and it has come principally because he has made a point of presenting a goodly stock to those who come in to look at various models. The plumber carries several different makes of water heaters, but this does not prevent him from having a representative stock of each. The result is that the customer sees immediately that he can get what he wants at this establishment, and thus the plumber easily lands enough business to justify him in keeping his stock of heaters up to the desired proportions.

It isn't a question of having enough business to justify a good stock—it's putting in a sufficient stock to justify getting enough business!

The Necessity of Sanitary Plumbing*

By W. C. GROENIGER, Director of the Division of Plumbing Inspection for the State of Ohio

SANITARY plumbing is the art of installing in buildings the pipes, fixtures and other apparatus used for introducing the water supply and removing liquid and water carried wastes. It represents an art upon which all civilization depends and must be installed in accordance with scientific principles and natural law.

There is nothing in a building that adds more to the comfort and convenience of the occupant than does a simple, efficient and economical system of plumbing. Did you ever attempt to realize what would happen to a city like Newark if all of her buildings were deprived of a plumbing system. The thought of deprivation is terrible when you begin to think about the insanitary condition that would follow and the nuisances that would result. the increased number of breeding places for flies, mosquitoes, rats and other carriers of communicable, contagious and infectious diseases.

The modern home, factory, school, theater, office building, hospital, hotel and public institution of today, would not and cannot be successfully operated without a system of plumbing and drainage. The removal of infectious material from buildings is of value to public health. The mental and physical health of the occupants of a home is dependent in a great measure upon the sanitary conveniences. They are essential to the cleanliness of both the person and apparel. The cleanliness of the body is simplified by the bath tub and shower bath. The cleanliness of the apparel is simplified by the laundry trays. The cleanliness of the hands, by which many diseases are transmitted to the mouth, is simplified by the lavatory. The sanitary condition of the kitchen and the cleanliness of cooking utensils and food is in a great measure dependent upon the kitchen sink. The sanitary drinking fountain has eliminated the danger inherent to the use of the common drinking cup, and the sanitary water closet is the safest method of removing human excrement and urine, which are among the greatest hazards to man. This modern convenience has eliminated thousands of foul germ-producing privy vaults, the chief breeding places of that disease-carrying pest and menace, the common house fly. The elimination of the privy vault has also removed one of the homes of the rat, another pest who is a very expensive boarder and a disease carrier.

The intelligent real estate dealer is aware that a system of plumbing increases the value of the building far beyond the actual cost of the plumbing system. The hotel manager is able to charge from fifty cents to a dollar a day more for a room with sanitary conveniences. Running water in hotels is now considered a necessary adjunct by the traveling public. The plumbing system in a hotel not only adds to the comfort, convenience and health of the patrons, but is a source of revenue, which brings large returns to the owner.

The housewife of this country owes a debt of gratitude to the plumbing business because of its progress and the measures adopted to enlighten the labor of house work. Cooking, washing and the removal of body and domestic wastes, formerly drudgery, are now simplified by sanitary conveniences. Formerly water had to be pumped or lifted and carried from the well, cistern or spring for drinking, cooking, laundry, bathing and other household purposes and the wastes had to be carried and emptied. The water was often of questionable quality. The method and place of waste disposal in nine out of ten cases resulted in a nuisance. The back-yard privy located at the greatest distance from the house to remove the possible odors in summer, added to the discomfort and inconvenience and the possibilities of added difficulties and irregularities in bad weather.

Go back thirty years or even twenty years and compare women's work of those days with today, and it will be found that most of the drudgery existing has been eliminated by the plumbing system. Hot and cold water for drinking, bathing and domestic purposes is conveniently arranged for use in the laundry, kitchen, bath and bed rooms. Domestic and body wastes are swiftly and safely removed from the immediate premises by the drainage system. Labor has been reduced, comfort and conveniences added and personal cleanliness simplified, pure water supplied, foul odors, unhealthful conditions and the elements favorable to the origin and development of disease have been removed.

Low first cost in plumbing installation is mistaken economy. A second-class plumbing and drainage system in cost will prove itself a second-class system in service. A year or so in service will reveal the inefficiency of the fixture, device or construction. Discomfort, inconvenience. cost of repairs, foul odors, insanitary and unhealthful conditions are the resulting penalties, which the occupant must pay.

Sanitary plumbing is of more real value than medicine. Plumbing provides means for keeping the body, wearing apparel, the house and our streets and alleys clean. Cleanliness means healthfulness. A plumbing system stands for cleanliness, which also means that the plumbing system prevents where medicine cures, and prevention is more desirable than the cure.

Investigation has shown that in the absence of sanitary regulations and wherever each person is permitted to install a plumbing system according to his own ideas. insanitary conditions are sure to prevail.

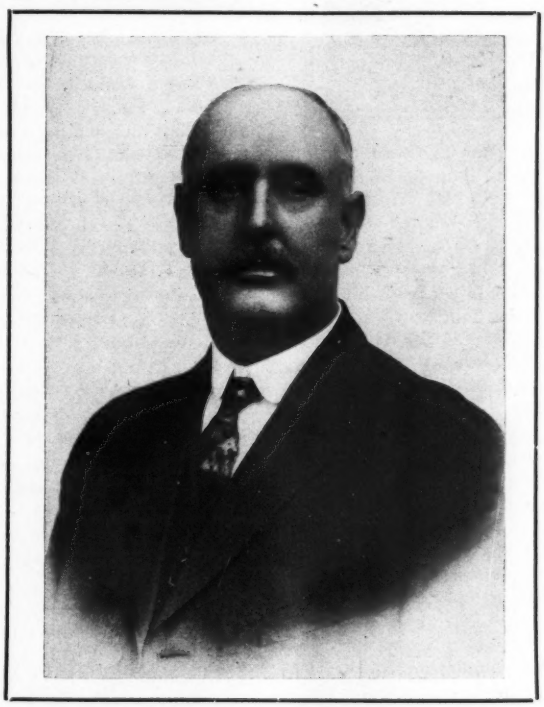
A great many people still cling to the idea that plumbing codes are created and laws enacted for the sole benefit of plumbers and that the public is made their legalized prey. This idea is kept in motion by real estate speculators and others whose only interests are mercenary. No humanitarian, social, moral, financial or sanitary argument can be adduced against the enactment and the standardization of plumbing codes by state and nation. This will not only eliminate commercially interested individuals and corporations, but any other organization whose interests are purely selfish.

To protect the public from insanitary plumbing and the influence of harmful surroundings caused by reckless competition, the use of cheap and defective material and improper installation, sanitary regulations are provided. regulating the location, construction, installation and inspection of plumbing.

*Paper read before the eleventh annual meeting of the American Society of Sanitary Engineering, held at Newark, N. J., August 1-4, 1916.

Sidelights on Men in the Trade

Thirty-One Years in Chicago Plumberdom



MOST people have heard the expression to the effect that the sun never sets on British territory. It might also be said with equal truth that the sun never sets on Irish territory, or rather on territory where the Irish are to be found. About the only territory void of the sons of Erin would be the region which is immediately adjacent to the North Pole, where the sun never shines save on rare occasions. Hence it is a safe conclusion that where there is no sunshine there is no Irish—not even a "little bit of Irish." There is hardly a village within the scope of the four points of the compass in English-speaking countries where the Irish are not represented. Their sturdy perseverance, their versatility and their natural wit and ready vein of good spirits, co-mingled with their other sterling qualities, render them a particularly constructive acquisition in any community. The sons of Erin have been among the most joked-about people in the universe, and they have generally taken the sallies of the joke-smiths with good-natured tolerance. Only one other set of mortals—the plumbing craft—have been as much the victims of irresponsible joking as the Irish. Therefore an Irishman and a plumber can understand and sympathize with one another. Both can sit in the same boat and laugh or sigh together as they paddle against the stream of popular misinformation, as it flows from the pens of newspaper punsters and the "smart Alecs" of the vaudeville stage. Now, to be an Irishman by ancestry and a plumber by calling would at first blush seem to place a man in a position where he must endure a double volley of jokes. And yet it is no hardship, judging from the genial and contented countenances of thousands of gentlemen of Celtic descent who are in the plumbing business in the U. S. A.

Take, for example, an individual instance—take the career of a popular, "hale fellow well met" man in the Chicago trade, a gentleman who is an Irishman by parentage, an Englishman by nativity, and an American by naturalization. We refer to Charles F. Taffe, the live and active president of the Chicago Master Plumbers' Association, who for thirty-one years has been identified with the plumbing business of the "Windy City."

As a business man and as a leader in local association affairs, he has rendered an excellent account of himself. During his many years of activity in the trade, he has won the high esteem and friendship of hosts of men throughout the country, and particularly is this true of men in state and national association circles. Genial and courteous in his dealings with men in and out of the trade, he has naturally won many enduring friendships.

As a local association officer, he has been active in frequent movements to improve the sanitary conditions of a great city, through the stricter enforcement of laws governing the installation of plumbing systems. Advising with the health department, either personally or through association committees, he has been able to secure that particular kind of co-operation from the city authorities which would make for a "cleaner and healthier Chicago."

Mr. Taffe was born in Liverpool, England, in 1868, being of Irish parentage. He was brought to the United States when he was two years of age. He was educated in the public schools of Michigan and Illinois.

When he was seventeen years of age he decided that he wanted what most boys want sooner or later—a job. He had grown tired of playing baseball with the other lads of the neighborhood. He decided that it was about time to quit being a baseball player around vacant lots. There was no profit in the game, although there was lots of fun in it. But fun didn't butter his bread, so bidding farewell to the "days of real sport," he went to work as an apprentice at the plumbing trade in Chicago. As an apprentice he was bright, conscientious and ambitious, and he made rapid progress.

In 1890 Mr. Taffe was secretary of the local journeyman's association. The transition from journeyman to master plumber came soon after, when a partnership was formed to conduct a plumbing business under the firm name of Taffe & Leibrandt. In 1898, however, Mr. Taffe went into business for himself at his present location, 21 East Thirty-first Street.

He became a member of the Chicago Master Plumbers' Association in 1893. Up to this time he had been a bachelor, but the transition from the single to the double harness came on September 15, 1896, when he was married to the girl of his choice—and a good choice it was, for he has often been congratulated upon his judgment in making the selection.

In 1915 Mr. Taffe was elected by a large majority as president of the Chicago Master Plumbers' Association. He was honored by re-election for the 1916 term. As a local association member he has held every office within the gift of the organization.

To those who are familiar with ancient Irish history, it is of interest to know that the name Taffe can be traced back to a very early period—the year 1600—when the orig-

inal Taffe famliy were the possessors of a coat-of-arms which was bestowed by royal authority. The name Taft, according to genealogists, is also derived from the ancient Irish House of Taffe.

San Bernardino, Cal.—Gustave Johnson has secured the contract for plumbing the Elks' new gymnasium. Consideration $2,343.

Vancouver, Wash.—Geo. W. Sykes has secured the contract for plumbing the new administration building at the State School for the Blind.

Atlantic City, N. J.—J. H. Moore has secured the contracts to install plumbing in two new bungalows now being erected in Venture City, N. J.

Houston, Tex.—McNeeley & Heitmann have been awarded the contract for the installation of a plumbing system in fire station No. 12. The contract amounts to $700.

Summit Hill. Pa.—Francis Boyle has secured the contract for the installation of heating and ventilating systems in the local high school building. Consideration $2,800.

Petoskey, Mich.—Bump & McCabe have secured the contract for the installation of a plumbing system and drinking fountains in the new Conway Public School building.

Grand Rapids, Mich.—The Knee Heating Co. of this city has secured the contract for the installation for a hot water heating system in Fritz C. Jehle's new residence on Avalon Terrace.

Grand Rapids, Mich.—The Pulte Plumbing & Heating Co., of this city has been awarded the contract for the installation of an up-to-date heating system for the new high school at Sturgis, Mich.

Riverside, N. J.—E. C. Fish has been awarded the contracts for plumbing eight new dwellings being erected for Geo. Arndt. Mr. Fish is also installing a new heating system in the Delanco School.

Colorado Springs, Colo.—The St. John Plumbing & Heating Co. has secured the contract for the installation of plumbing and heating systems in the Santa Fe Railroad's new $200,000 station in this city.

Grand Rapids, Mich.—The Richard Plumbing & Heating Co. has been awarded the contract for the installation of drinking fountains and a water cooling system in the new plant of the Grand Rapids Bread Co.

Syracuse, N. Y.—P. D. McCarthy has secured the contract for the installation of a steam heating system in C. E. Chappell's new residence on Comstock Avenue. Mr. McCarthy has also secured the contract for installing an up-to-date plumbing system in the New Velasko house on Bellevue Heights.

A public comfort station will soon be built at Richmond Market in Baltimore, Md.

Work has just been started on a new public comfort station at the public library in Seattle, Wash. The contract for the plumbing system has not yet been awarded.

The Board of Public Works at Oshkosh, Wis., has had plans prepared for the construction of a public comfort station in South Park in that city. It is planned to have the structure completed by May 1, 1917.

Allentown, Pa.—Titus H. Walter & Son have purchased the business of the Allen Plumbing and Heating Co. at 403 North Seventh Street.

Miami, Fla.—L. A. McGhan has opened an up-to-date plumbing and heating establishment in this city.

Indianapolis, Ind.—Keil & Wolfanger have opened a plumbing business at Virginia and Woodland Streets.

Vermillion, S. D.—The Dains Plumbing Co. has been incorporated with a capital of $10,000. The incorporators are Thomas Dains, R. Reese and E. L. Reese.

Muscatine, Ia.—Fred Wirtz and Frank Schmer have formed a partnership under the name of Wirtz & Schmer and have purchased the plumbing and heating business of John Redmond.

Racine, Wis.—Wm. A. Fall has opened a plumbing and heating establishment at 1530 Packard Avenue. He would like to receive catalogues from jobbers and manufacturers of plumbing and heating goods.

FINANCIAL TROUBLES.

Lynn, Mass.—Frank W. Sawyer, a master plumber, has filed a petition in bankruptcy. His liabilities exceed $4,000.

Waltham, Mass.—D. Warner Jones, a plumbing contractor, has filed a bankruptcy petition scheduling his liabilities at $6,667.

Oakland, Cal.—John B. Francis, a plumber of this city, has filed a petition in bankruptcy, his liabilities being placed at $1,766.

York, Me.—Albert M. Chase, as master of this city, has filed a petition in bankruptcy scheduling his liabilities at $6,167 and his assets at $4,125.

Max W. Sutton.

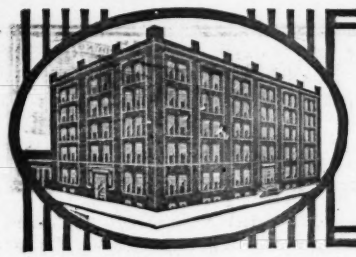
Max W. Sutton, who has conducted a plumbing business for the past eight years at Colusa, Cal., died August 24th after having been in poor health for some time. His widow survives him.

John Cadoo.

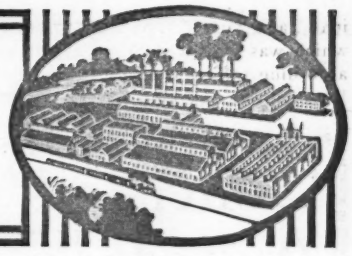
John Cadoo, formerly engaged in the plumbing business at Brooklyn, N. Y. died at his home in Butte, Mont., on August 28th, in his sixty-first year. His wife, two daughters and a son survive him.

A. J. White.

A. J. White, president and founder of the A. J. White Plumbing Co., of Los Angeles, Cal., died at his home at that city on August 24th, after several weeks' illness. Mr. White was a member of the Master Plumbers' Association in Los Angeles. His wife and two children survive him.



Among the Wholesalers and Manufacturers



COMPANIES RECENTLY INCORPORATED.

The Root-Johnson Ventilating Co., of Indianapolis, Ind., has been incorporated with a capital of $10,000, to manufacture ventilating systems. The incorporators are: William R. Root, Ralph C. Root and M. G. Root.

The Kwick-Bath Manufacturing Co., of Petersburg, Va., has been incorporated with a capital of $25,000, to manufacture plumbing specialties. The officers of the company are: Wm. T. Clute, president; M. A. Stryker, vice-president; and George B. Stryker, treasurer.

NEW MANUFACTURERS' AGENTS AT LEXINGTON, KY.

The Thayer Service Co. has been organized at Lexington, Ky., to act as manufacturers' agents for plumbing and heating goods, and steam specialties. The new company is headed by V. H. Thayer.

NOT WESTERN TRADE "GOLD" BUT "GOLF" ASSOCIATION.

In the Secretary's announcement of the next meeting of the Western Trade Golf Association, to be held at the Wheaton Country Club, Wheaton, Ill., on Wednesday, September 13th., reference is made to the Western Trade Gold Association. The secretary wishes to assure the members through these columns that this was purely a typographical error and was not intended as subtle flattery to those players, who recklessly shoot expensive spheres into the tall grass to rest forever.

SALES REPRESENTATIVES OF J. B. WISE, INC., IN ANNUAL CONVENTION.

J. B. Wise, Inc., of Watertown, N. Y., held the annual convention of its sales representatives on Monday and Tuesday, August 28th and 29th, at the main office of this concern in Watertown. The time was spent in conferences and in a thorough visit to the factory. The sales representatives and department heads were entertained at the home of C. R. Wise, vice-president and manager, on Tuesday evening. Among those present were: Earl Wise, W. H. Perkins, L. Mitchell, Harry Verbeek, W. W. Brecht, J. L. Stulsaft and Eugene Willard.

ILLINOIS CHAPTER OF A. S. H. & V. E. ANNOUNCES DATE OF SEASON'S FIRST MEETING.

The Illinois Chapter of the American Society of Heating and Ventilating Engineers will hold its first meeting of the 1916-1917 season on Monday evening, October 9th, at the Morrison Hotel, Chicago, according to official notice just issued by Secretary W. L. Bronaugh. The regular dinner will be served at 6 o'clock, and this will be followed by the election and installation of officers for the coming season. It is expected that all the members of the chapter will be in attendance.

IMPORTS OF PIPE AND FITTINGS INTO SOUTH INDIA.

Good Chances for Export of Pipe and Fittings of American Manufacture to That Country.

The imports of cast iron pipes and fittings into Madras Presidency decreased in value from $673,013 for the fiscal year ending March 31, 1914, to $73,101 for the year ending March 31, 1915, according to a report just received from United States Consul Lucien Memminger, Madras, South India. Of the total for the two years the imports from the United Kingdom were valued at $643,256 and $71,035, respectively. The imports of wrought pipe and fittings, however, increased from $107,166 for the year ended March 31, 1914, to $140,851 for the following year.

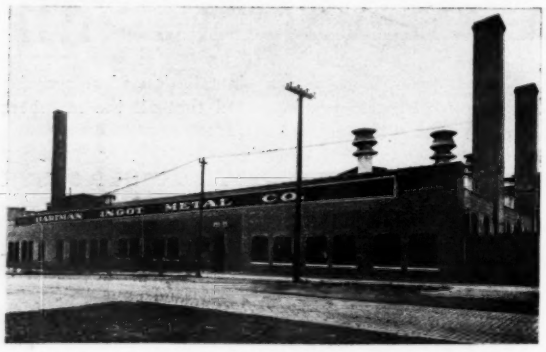
Madras, the principal port of South India, received the largest shipments; but the small ports of Cochin and Calicut, on the west coast, and Tuticorin and Cocanada also received small shipments, probably for immediate use there or in near-by towns. The great decrease in the imports of cast iron pipe and fittings into Madras Presidency in 1914-1915 as compared with the previous year was due partly to dislocation of the trade as a result of the war and also to the fact that there were particularly large imports in 1913-1914 owing to the extension and repairs of the Madras waterworks and construction of new works at Ernakulam. The outbreak of the war caused a temporary halt in works involving the use of pipe and fittings, but most of these projects, being of an urgent character with appropriations already made, were soon taken up again, and in addition a number of new enterprises are now under consideration by various municipalities.

The quantities of pipe and fittings imported into all seaports of British India (Calcutta, Bombay, Madras, etc.) in 1914-1915 were 27,021 tons from the United Kingdom, 794 tons from Germany, 107 tons from Belgium and 11,814 tons from the United States. The total declared value was $2,078,320, which was a decrease of 15 lakhs ($486,650) in value as compared with the previous fiscal year. Some of the Bombay and Calcutta imports possibly reached parts of South India by rail or by coastwise vessels; but such shipments would be exceptional, as Madras is more favorably situated for the distribution of such supplies in South India than are the northerly ports.

The United Kingdom and the United States are now the only foreign sources of supply for pipes and fittings for this market. It would appear that the share of the United States could be greatly increased if efforts were made to that end, especially as the qualities of American pipe are already known locally.

HARTMAN INGOT METAL CO. INCREASES ITS PLANT.

The Hartman Ingot Metal Co., of 2511-2525 West Twenty-first Street, Chicago, has recently added 24 melting furnaces to its plant. This company was started by John Hartman in July, 1910, with only three melting

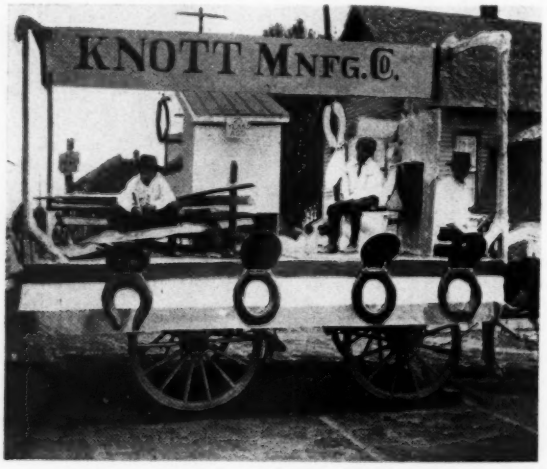


Hartman Ingot Metal Co.'s Plant With Its New Addition.

furnaces. From time to time furnaces were added until the company had 12 in operation in July, 1913. The company now has 36 furnaces in operation turning out H. I. M. ingots which are being sold to manufacturers of plumbers' and steamfitters' goods. It is said that Mr. Hartman's success is due to his close attention to the particular needs of the various manufacturers, thus enabling him to supply the proper mixture of metal in each case. The H. I. M. foundry buildings cover 30,000 sq. ft., all of which are being used to maximum capacity.

KNOTT MFG. CO.'S FLOAT IN THE PARADE OF THE INDIANA CENTENNIAL CELEBRATION.

The accompanying illustration shows the float of Knott Mfg. Co., of Tell City, Ind., as it appeared in the parade of the Indiana Centennial Celebration and Home Coming



Knott Mfg. Co.'s Float in the Parade of the Indiana Centennial Celebration.

at Tell City. This float, which was gotten up to represent the progress of sanitation, attracted more attention than probably any other float in the parade. This company reports an exceptionally busy season as a result of a gratifying demand for its prodcts. The company is headed by the following officers: President, J. T. Knott; vice-president, Fred Kreisle; secretary, J. Zoercher; treasurer, Walter F. Huthsteiner; general manager, Paul R. Bishop.

WALWORTH MFG. CO'S. CHICAGO BRANCH IN NEW QUARTERS.

The Walworth Manufacturing Co., of Boston, Mass., has just moved its branch in Chicago from 11-17 South

The New Home of the Walworth Mfg. Co.'s Chicago Branch.

Desplaines Street to 220-222 North Desplaines Street, where it has secured a building with six stories and basement, giving the concern facilities for carrying a large stock of its products.

HOW THE WAR HAS AFFECTED THE WORLD'S BUSINESS.

How the war has affected business in the principal belligerent and neutral countries is shown in a report prepared by the Bureau of Foreign and Domestic Commerce for Senator Simmons, chairman of the Senate Committee on Finance. The countries covered are the United States, Canada, England, France, Germany, Austria-Hungary, Italy, Russia, Spain, Sweden, Argentina, Brazil, Australia, British India, British South Africa, Egypt and Japan. The following general conclusions are drawn:

Business activities were fairly normal in the various countries of the world during the two years preceding the outbreak of the war.

In every country, including the United States, there was a decided decline in business activity after July, 1914.

The period of business depression following the outbreak of the war lasted from four to six months in most of the neutral countries. In the belligerent countries the upward trend did not begin until the last few months in 1915.

There was a slight depression in business activity in the United States in the latter part of 1913 and early in 1914, but in the spring and summer of 1914 there were signs of recovery. The outbreak of the war, however, caused a decided decline.

The United States at the close of the period, April, 1916, had entered upon a period of business activity which has had no parallel in the history of the country.

To indicate the business activities of the various countries covered by the report, statistics are printed showing imports and exports of merchandise, imports and exports of gold, receipts of railways, bank clearings, business failures, postal, telegraph and telephone receipts, building operations, production of pig iron and prices of commodities. Complete figures could not be obtained for all countries, but as the report stands it contains the most complete and reliable collection of statistics and diagrams that have been issued on the subject under one cover since the war started.

The report has been published as Senate Document No. 477, and contains 75 pages.

Personal Mention

Theodore Ahrens, president of the Standard Sanitary Mfg. Co., of Pittsburgh, Pa., was in Chicago on business this week.

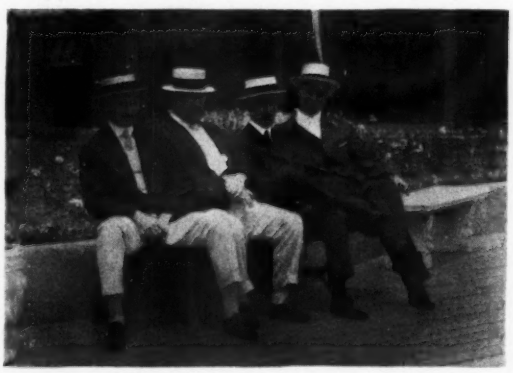
H. B. Hallett, of the W. A. Case & Son Mfg. Co., of Buffalo, N. Y., passed through Chicago this week on an extended trip through the West.

H. F. Meyer, president of the Meyer Supply Co., of Cleveland, O., left this week on a vacation trip to Atlantic City, N. J. He was accompanied by his family.

Harry Verbeek, manufacturers' agent, of Chicago, is at present in the East visiting some of the most important manufacturing centers in New York, Connecticut and New Jersey.

Bruce Fulton, manager of the Chicago office of the Standard Sanitary Mfg. Co., of Pittsburgh, Pa., has returned from an extensive business trip through the northwestern states.

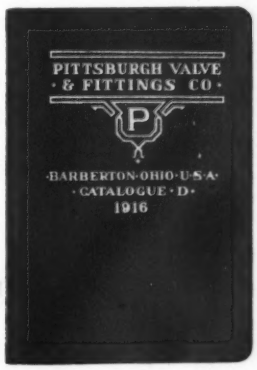
F. M. Menninger, manager of the Chicago office of A. M. Byers Co., of Pittsburgh, was run over by an automobile on Michigan Avenue, Chicago, on Tuesday, September 5th. At this writing it is not thought that his injuries will prove serious.



A. K. Archibald, E. A. Pinchin, Wallace J. Qua and T. L. Lambourne, Sales Manager; all of the Wolverine Brass Works, Grand Rapids, Mich.—From "Domestic Engineering" Photo, taken at the Atlantic City Convention of the National Association of Master Plumbers.

PITTSBURGH VALVE & FITTINGS CO.'S NEW CATALOGUE.

The Pittsburgh Valve & Fittings Co., of Barberton, O., has just issued a new catalogue, the front cover of which is shown in the accompanying illustration. This catalogue illustrates and describes in detail the company's products, including iron pipe fittings, brass and iron valves, etc., for steam, gas, water and oil. Attention is directed to the fact that it shows a number of additions to the line of material, made by this company, and which has not appeared in previous issues of its catalogue. The most notable of these additions being: Cast iron offsets, malleable iron partition tees, expansion joints, brass gate valves with rising stem, brass oil cups, plain brass foot valves, radiator plugs and bushings, malleable cock wrenches, malleable hydrant clamps, malleable vacuum cleaner fittings, etc. This catalogue which consists of 356 pages, 5 by 7½ inches, is compiled and printed in such a way that it reflects great credit both upon the company, in whose interest it is published, and upon the compiler and the printer. Interested parties who have not yet received a copy can secure it from the above-named company upon request, mentioning "Domestic Engineering."



The Metal Market

Steel and Iron.

About 200,000 tons of steel will be used by the government in its naval program in 1917, mostly plates and shapes. This means that a number of Eastern mills will have to set aside rolling capacity for the government, and foreign and domestic shipbuilders will be disappointed on deliveries. The government will have to pay around 2.9 cents a pound for plates and 2.5 cents for shapes. Orders for three steamers have been taken by Pacific Coast shipyards. Two American boats are to be built by a Philadelphia concern and two at Baltimore for Norwegian companies. Forty thousand tons of plates and other steel have been ordered by an Eastern shipyard, and Japanese agents are inquiring for 20,000 tons of plates. France placed an order for 15,000 tons of rails making the aggregate tonnage contracted for during the past year about 100,000 tons. Inquiries are out for 100,000 tons of 60-pound rails by British interests. Agricultural implement manufacturers have covered liberally for steel bars paying 2.5 cents. About 100,000 tons have been taken to date. A large buying movement in munitions is expected as soon as deliveries can be arranged.

Basic iron has not kept pace with Bessemer and an advance of 50 cents a ton is looked for soon. Bessemer is quoted at $21. Valleys and basic at $18 to $18.50. Buffalo furnaces report sales of 100,000 tons of pig iron last week. Foundry and machine shop interests are expected to come

into the market before the end of the year. Strikes of moulders and machinists have kept foundry irons from enjoying the boom. A Detroit furnace sold 200,000 tons of mixed grades, and Pittsburgh brokers made a sale of 10,000 tons and are figuring on 25,000 tons additional of basic iron. The influx of business is rapidly clearing the market of cheap iron, and conditions are shaping for a general advance in prices. Thus far, however, the bulk of domestic business has been done at very close prices. Quotations are as follows:

No. 2 X Northern Foundry, New York	$19.50	to	$20.00
No. 2 X Northern Foundry, Buffalo	18.50	to	19.00
No. 2 X Southern Foundry, Birmingham	14.50	to	15.00
No. 2 X Southern Foundry, Cincinnati	17.40	to	17.90
No. 2 Southern Ohio Coke, Cincinnati	18.00	to	18.50
No. 2 X Northern Foundry, Chicago	18.50	to	19.00

Copper.

Business in copper continued very active last week, large producers reporting the booking of six sizable orders. Domestic consumers began buying for the first quarter of 1917, and producers say that business in this direction will more than likely show further increase in the next two weeks. The most important development was the statement that the big Allied Copper order which was under negotiation had been put off. Scarcity of electrolytic for delivery this year is becoming acute. Fortunately domestic consumers are not in pressing need of copper for delivery this year, the bulk of the nearby demand coming from abroad. Spot copper held around 28½ cents, and for first quarter of next year sales were closed at 26½ cents.

Tin.

The market in tin was influenced by fluctuations at London and Singapore, but price changes did not result in users placing orders for the metal. The situation reflects the large stocks carried by consumers, who are in a position to ignore developments of a temporary nature that may cause higher prices. Deliveries amounted to 4,335 tons in August. Stocks and landing on August 31 were of record breaking size amounting to 4,756 tons. Despite the large stocks sellers did not lower prices, it being pointed out that the bulk of the holding were for the large consumers while what tin remains unsold was being held for higher prices. Spot Straits tin closed at 38¾ cents.

Lead.

Continuation of the lull in buying of lead brought an easier market last week there being an effort on the part of some small holders to liquidate at the high prices. The situation continues as previously outlined. The large independent producers are well sold up for September, and the leading interest is also apparently booked full, while the small producers have enough orders to enable maintaining the outside market around or above the trust price. Spot lead was held in New York as 6.7 cents for ordinary brands, while standard brands were quoted at 6.75 cents.

Spelter.

Business failed to improve last week, and interests who formerly were optimistic were disposed to make concessions on forward deliveries. Consumers did not respond to the lower prices, being well supplied, while the absence of foreign demand is taken to indicate the growing independence of England toward American spelter. Spot spelter was offered at 8⅞ cents, New York and 8⅝ cents, St. Louis.

Old Metals.

Selling prices for old metals are quoted approximately as follows:

Copper, heavy cut and crucible	$0.24
Copper, heavy and wire	.23
Copper, light and bottoms	$0.20
Heavy machinery composition	.19½
Brass, heavy	.13¾
Brass, light	.11¼
No. 1 Clean brass turnings	.15
No. 1 Composition turnings	.17
Lead, heavy	.06¼
Tea lead	.05½
Zinc scrap	.08
Solder joints	.08
Cocks and faucets	.13½

The Annual Outing of the Master Plumbers' Association of Asbury Park, N. J.

The master plumbers of Asbury Park, N. J., turned out on Wednesday, August 29th, for their annual outing. The day's program was a novel arrangement. Instead of wearing themselves out with baseball and other strenuous athletics, a trip by motor and motor boat to Forked River was arranged for.

The trip itself is a day's outing. The going lap of the journey consumed some five or six hours. Motors were used to Point Pleasant. From there motor boats carried the picnickers across Barnegat Bay to Forked River a two-hour cruise. Fishing was indulged in on the way over and upon arrival at Eno's Riverside Hotel an excellent shore dinner was served. Nothing then remained but to tell a few stories and return home.

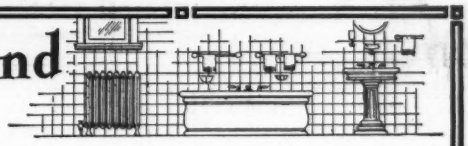
Andrew Van Cleve was chairman of the outing committee and he was assisted by Wm. Brighton.

The supply men from Philadelphia, New York and neighboring towns were there in generous numbers, and representing the State Association was President Joseph A. Sproules of Jersey City.

Extent of An Agent's Authority.

In legal significance, an agent's authority, the Supreme Court of Oklahoma says, in National Surety Co. vs. Miozrany et al., 156 Pacific Reporter, 651, is the sum total of the powers which his principal has caused or permitted him to seem to possess. It is not limited to the powers actually conferred, and to those to be implied as flowing therefrom, but includes, as well the apparent powers which the principal by reason of his acts or conduct is precluded to deny. The instructions of the agent include, not only terms of the power which are intended to be made known to those who deal with the agent, and the deviations from which will render ineffectual his act, but also private instructions or directions to the agent as to the manner in which he shall execute his commission, but which from their nature, or the desire of the principal, it is manifest that it is not expected the agent shall disclose to persons with whom he deals. Between these there is a material distinction. The former are part of the agent's authority; the latter, however they may affect the agent, can have no effect to qualify the liability of the principal to third persons to whom they are not intended to be communicated. While, as between the principal and the agent, the scope of the latter's authority is that authority which is actually conferred upon him by his principal, which may be limited by secret instructions and restrictions, such instructions and restrictions do not affect third persons ignorant thereof; and, as between the principal and third persons, the mutual rights and liabilities are governed by the apparent scope of the agent's authority, which is that authority which the principal has held the agent out as possessing, or which he has permitted the agent to represent that he possesses, and which the principal is precluded to deny.

Among the Plumbing and Heating Contractors



Illinois

Chicago and Vicinity.

The amended statutes governing the heating and ventilating of public schools in the state, will go into effect on March 1, 1917. Heating and ventilating engineers will be interested in the new provisions which we quote herewith in part:

"When room heaters are used they shall be of suitable size to heat the room in all parts during the coldest weather to a temperature of 70 degrees Fahrenheit without keeping too hot a fire. The heater shall be surrounded by a heat-proof jacket at least 5 feet high. Two kinds of heaters may be used. First, one in which the jacket extends to the floor, provided that provisions be made to admit air to the heater from both outside of the building and from within the room. Second, one in which the jacket does not extend to the floor, but the construction is such that the entering air from the outside cannot spread over the floor. All class rooms shall have for each pupil at least 16 square feet of floor space and not less than 200 cubic feet of air space. When a warm air heater is used in the basement there should be an intake for fresh air from outside of the building and also a cold air intake from inside the school room. The duct to the warm air heater shall have a cross sectional area of 400 square inches. Dampers shall be provided which will make it possible to take all the air from one source or to take a part from both sources at the same time. There shall be an entrance to the basement from within the building as well as from without. The floor of the basement shall be of concrete or brick. Warm air shall be admitted into the room at the wall at least 6 feet above the floor. The cross sectional area of the duct and opening shall be at least 400 square inches. The opening into the foul air flue shall be so constructed that it will be heated by the smoke flue. The return cold air opening from the room as well as the opening from the outside shall be at the same wall as the warm air inlet and shall be 2 inches above the floor level. The grating over this opening shall be leaning against the wall at an angle of 45 degrees. The opening from the outside and the inside shall connect with the duct to the warm air heater. The damper shall be constructed so as to close either opening and leave the other open. The foot warmer or warm air register shall be placed on the floor level in the wall. No warm or cold air register shall be placed in the floor where it can be walked on or sweepings fall into it. When the fan system of ventilation is used, the warm air flues shall have a cross sectional area of not less than 9 square inches for each occupant of the room. The vent flues shall have a cross sectional area of not less than 10 square inches for each occupant of the room. Where the gravity system of ventilation is used, the opening to the aspirating coil and the warm air flues shall have a cross sectional area of not less than 16 inches, and the vent flues 14 square inches for each occupant of the room. In all systems of heating, ample provision shall be made to moisten the heated air. In school buildings hereafter erected, boilers shall be placed in fireproof rooms to guard against fire."

Whiteside & Beland is the name of a new firm, which will operate an up-to-date plumbing and heating establishment at 1729 East Thirty-fifth Street. Mr. Whiteside has been in business for himself during the past few years.

H. H. Miller, of 1520 South Kedzie Avenue, will install the plumbing system in a $125,000 community house to be erected at Independence Boulevard, near Twelfth Street.

The plumbing contract for a four-story warehouse and boiler house to be built at Fifty-fourth and La Salle Streets, has recently been awarded to O'Callahan Bros., of 157 North Market Street.

The United Plumbing & Heating Co., of 3012 West Twelfth Street, will install the plumbing system in a two-story building, to contain theater, dance hall, lodge rooms and offices, to be erected at 3301-3309 Milwaukee Avenue.

Marcus Weil, of 3744 West Chicago Avenue, has been awarded the contract for the installation of the plumbing in a 36-flat building, to be constructed at 925-933 Cornelia Avenue. Estimated cost of building $100,000.

The plumbing contract for a forge shop and foundry to be built at Pullman, Ill., has been awarded to the Murphy Plumbing Co., of 23 East Congress Street. The heating contract went to the L. H. Prentice Co., of 330 Sherman Street.

The P. Nacey Co., of 927 South State Street, will install the plumbing system in a three-story school for boys, to be erected at 4731 Ellis Avenue.

Wm. F. Hildeman, a plumbing and heating contractor, of 23 Illinois Street, Chicago Heights, has just completed a wash room for the American Manganese Steel Co., the plumbing equipment for same consisting of fourteen showers and twelve 6-foot wash sinks. The installation is a thoroughly modern and attractive one.

The Industrial Education of the youth of our State and the proper vocational training of the young is receiving considerable attention from educators and employers. Several meetings have been held recently by the Building Construction Employers' Association of Chicago in connection with the subject and efforts have been made to have the employers and the labor element unite upon a satisfactory bill to be introduced in the next session of the State Legislature favoring the project and authorizing the City through the Board of Education to provide means and schools for the advancement of young men in industrial training. A conference was held recently at the Auditorium in reference to the matter which was attended by President Gindele, Secretary Craig, Superintendent Shoup of the Board of Education, Assistant Superintendent Roberts, Max Loeb of the Board, F. de Coningh, Harry C. Knisely and D. M. Haines of the Sheet Metal Contractors' Association. The subject was thoroughly discussed by Professor Payne of the Bradley Institute and Frank L. Glynn of Wisconsin and other gentlemen who attended the meeting. The matter was subsequently referred to President Gindele who was requested to call a

meeting of the Joint Conference Board and submit the subject to them with a view toward having the labor organizations co-operate with the employers in having a proper act drawn up. The Joint Conference Board held one meeting in reference to the subject and the matter is now awaiting the actions of the labor organizations.

The United States Senate during the past month passed what is known as the Smith-Hughes Vocational Bill and it is now up to the House of Representatives to take action. Under the provisions of this bill Chicago would be entitled to about one hundred thousand dollars to be used next year in vocational training. This sum would gradually increase and in ten years would reach nearly the vast sum of one million dollars. The subject is one which should receive the hearty support of every employer. The need of proper training for the youth of our country is a necessity which must be met and proper and adequate provisions made at as early a date as possible.

Minnesota

St. Paul and Vicinity.

Practically every plumber in St. Paul is busy these days, the condition reflecting the rush of work in the various shops which is likely to continue through September, October and into November. The increase in the valuation of plumbing permits over August of 1915 is $24,436. The permits for August 1916 totaled $73,771 and for August 1915, $49,335.

At the meeting of the St. Paul Master Plumbers' association on Monday evening, September 11th, postponed because the regular meeting day, September 4th, was Labor Day, there is likely to be discussion of the question of the Master Plumbers' Association guaranteeing the work of its members. Advocates of the plan declare there is great merit in the proposition and a new means offered of combating the quack evil. A Master Plumbers' Association guarantee would mean a high standard of work, and would redound to the credit of the whole membership.

M. A. Lehman and Harry F. Lodge, both Master Plumbers in Philadelphia.—From "Domestic Engineering" Photo taken at the Atlantic City Convention of the National Association of Master Plumbers.

Recent permits, which run largely to dwellings, at this season of the year, include one to L. F. Nienaber for plumbing work on a two-story frame belonging to C. L. Maguire at Lombard and Ridgewood Avenues. Consideration $800. Mr. Neinaber also will do the plumbing work on another frame house belonging to A. Kupperschmidt, Geranium and Forest Streets. Consideration $235.

Wagner & Tschida have several new plumbing jobs, one of the permits being for work on a two-story frame of P. Preiner at Van Buren and St. Albans Streets; consideration $325; another for plumbing a one and a half story frame for A. Ziebell at Thomas and Dale Streets; consideration $240; also for a one and a half story frame for Mrs. Sommers, Blair and Avon Streets; consideration $260.

E. J. Snyker has a $360 plumbing job on a two-story frame for Mr. Carnfel at Grand and Pascal Avenues; consideration $360; also on the two-story frame of E. E. Martin, Wilder and St. Anthony Avenues; consideration, $350; also on the two-story frame of John Scharff, St. Clair and Oxford Streets; consideration $330.

H. L. Cameron is doing the plumbing on the two-story frame of H. Johnson, at Charles and Albert Streets; consideration $300.

J. A. Healy is doing the plumbing on the two-story frame of Anthony Rowland, Portland and Snelling Avenues; consideration $350.

J. B. Vanderlinde has the plumbing contract on the one-story frame of F. A. Johnson, Portland Avenue and Albert Streets; consideration $325; also on the one-story frame of Mr. Weinberger, Fifth and Earl Streets; consideration $215.

A. E. Snaith is doing the plumbing work on the two-story brick dwelling of Dr. Lietch, Seventh and Atlantic Streets; consideration $475; also on the one-story frame of August Mielstedt, Como and Parkhill Avenues; consideration $350.

J. F. McQuillan has a $300 plumbing job on the two-story brick barn of the Butler Transfer Company, Columbia and L'Orient Streets; also the work on the one and a half story frame of Mr. Schmidt at Lafond and Hamline Avenues; consideration $235.

R. N. Brooks has the plumbing contract on a one and a half story frame of Mr. Bell at Fuller Avenue and Dale Street; consideration $385.

E. R. Bradshaw has the plumbing work on the two-story frame of A. Swanstrom at Frankson and Hamline Avenues; consideration $425.

L. F. Nienaber has the contract for plumbing work on the two-story brick store of the Bowlin Realty Company at Seventh and St. Peter Streets; consideration $500.

Louis H. Zuehls has recently secured two plumbing jobs, one for $325 on a one and a half story frame building for C. J. Egren at Maryland and Arcade Streets, and the other, for $300, on a frame dwelling for S. A. Hedding at 410 Otis Street.

Indiana

Indianapolis and Vicinity.

Kwoczalla & Son, plumbing contractors of Terre Haute, announce that they have moved from 114 South Sixth Street to 1242 Lafayette Street.

The Lane-Pyke-Werkhoff Co., of Lafayette, has secured the contract for the plumbing in the new brick school building that is being built at Boswell, Ind.; consideration, $2,256. Wallace Bros., of Lafayette, were

awarded the contract for the heating and ventilating. The building is to be two stories high and will be completed in a few months.

Hammond plumbers—masters and journeymen—joined in a picnic at Sheridan Beach, Flint Lake, last Saturday, and all reported a most enjoyable time. The trip was made in special interurban cars. Following a basket dinner at the noon hour, the men folks of the crowd staged a baseball game, the master plumbers composing one team and the journeymen the other. The game was won by the latter by a score of 17 to 14. The score indicates that it must have been a very "hot" game. In one inning thirteen runs were made by the masters, while the best the journeymen could do in that length of time was seven runs.

Three bids for the plumbing work of the new Methodist Church building at Rochester, were received at a meeting of the building committee last week. The bidders were: Arthur Freese, $620; Otto Sherbondy, $625.94, and O. W. Stengle & Co., $669.92. Freese's bid was accepted by the committee.

Zimmerman & Day, of North Manchester, were the successful bidders for the heating and plumbing work in the new $15,000 business building now being erected in Warsaw by the Commercial Telephone Co.

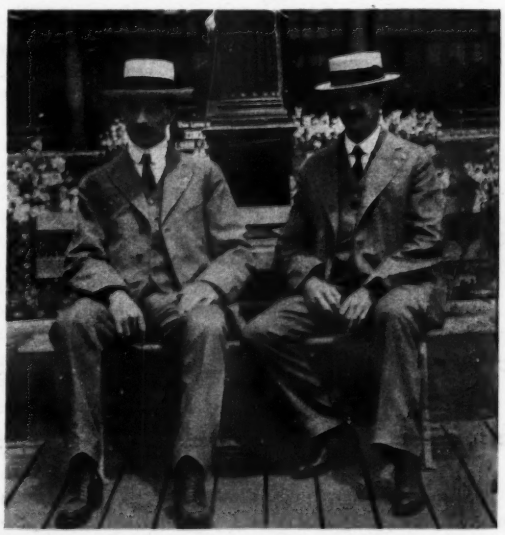
Pennsylvania

Philadelphia and Vicinity.

A. Geiger, of North Fifth Street, has been awarded the contract to install a new heating system in the property at 3705 Chestnut Street for Weightman Estate. Consideration $1,750.

P. J. Hoft, of 245 South Eighth Street, has secured the contract to make alterations to the plumbing system in the property at Eighteenth and Arch Streets.

Geo. W. Wismer, of 523 North Fortieth Street, is doing the under draining work and installing new plumbing fixtures in four residences on Marion Avenue.



A. W. Luck, President and General Manager, and A. L. Weigel, Treasurer, both of the Reading Heater & Supply Co., of Reading, Pa.—From "Domestic Engineering" Photo, taken at the Atlantic City Convention of the National Association of Master Plumbers.

J. J. Mulhern, of 3625 Haverford Avenue, is recovering from a severe attack of appendicitis and will soon be around again attending to his work.

Walters, Purks & Mellon, of West Philadelphia, have been awarded the contract for the plumbing and heating in the addition to the Catholic church at the corner of Fifth Street and Girard Avenue.

H. W. Meier, of Fourth and Green Streets, has secured the contracts for under-draining several houses in the southern part of Philadelphia.

Walter E. Gilham has secured the heating contract on the Railway Exchange Building, to be built on Walnut Street, between Seventh and Eighth Streets.

H. W. Meier, of Fourth and Green Streets, has the contract to underdrain a row of houses in Richmond.

Rhodes Bros., of Chester, have been awarded the contract to install plumbing and heating in 144 houses; consideration $35,000.

New York

New York and Vicinity.

Walter Sharp, son of Mr. Sharp, of Sharp & Gunn, plumbing contractors of West 145th Street, New York, fell a victim to the paralysis epidemic, which has been infesting New York and other eastern cities, and died on Friday, August 18th. The little fellow was five and a half years old and the constant companion of his father. Every spare moment of Mr. Sharp's time was given to the boy even to having him with him at the Master Plumbers' Association meetings occasionally. The boy was ill but two days before he succumbed to the deadly disease.

E. S. Kannel, of 956 Lind Avenue, Bronx, has secured the heating contract for a new $400,000 apartment operation at Ninety-fourth Street and Broadway, Manhattan.

W. Y. Jack Co., of 618 Lexington Avenue, Manhattan, will do the plumbing in connection with the $40,000 alteration job in C. E. Danforth's residence, on East Seventy-second Street.

Johnson & Morris have the contract for the heating and James McCullagh the contract for plumbing in the alteration of the loft building at 227-231 Fulton Street, Manhattan.

Baker, Smith & Co. will do the heating in the new American Express office building, at 63-65 Broadway, Manhattan.

Stuart & Donahue, of Richmond Hill, have secured the contract for the plumbing in the new St. Benedict-Joseph Church, at Morris Park, L. I.

Callahan & Kingsley, of 343 West Fifty-third Street, Manhattan, have the contract for the heating work in the new telephone building, at Fairview and Gates Avenues, Evergreen.

Sharp & Gunn, Manhattan, will install the plumbing in the Dayton Co.'s new apartment operation, at 561 West 140th Street. Raisler Heating Co. will install the heating system.

James Armstrong, of Manhattan, will do the plumbing and heating in the factory extension of Robert Gair & Co., at Washington and Front Streets, Brooklyn.

Fred Hess Co., 59 Beaver Street, Manhattan, has secured the contract for plumbing in a new garage at St. John's Place and Classon Avenue, Brooklyn.

The new Bayside National Bank building plumbing and heating contracts have been awarded to Alexander Wil-

liams and Fred B. Robertson, respectively, both of Bayside.

Hemlin & Smith, of West Ninty-ninth Street, Manhattan, will do the plumbing work in the new American Express Co.'s office building, on Broadway.

H. A. Wheeler, of 188 East Sixty-fourth Street, has the plumbing and Miller & Brady, 217 East Thirty-fifth Street, the heating contract in connection with the alteration of the New York Foundling Hospital.

George Gibson Co., of East Twenty-first Street, Manhattan, will install the heating system in Vernon Prentice's new residence being erected at 607 Park Avenue. This company also has the contract for plumbing in Mrs. Frederick Lewisohn's new residence, at 835 Fifth Avenue. H. A. Jacobson is the architect on both buildings. The plumbing in Nathan Mfg. Co.'s new $1,000,000 manufacturing plant, at Flushing, and the plumbing and heating in W. D. Thornton's residence, at St. James, are also among contracts just secured by the Gibson Co.

Wells & Newton Co., of Avenue B, Manhattan, have the contract for the plumbing in the new $700,000 garage and storage building being erected by John Wanamaker, at 726-730 Broadway. Gillis & Geoghegan, of West Broadway, have the heating contract.

John A. Scollay, of 74 Myrtle Avenue, Brooklyn, will install the heating system in a dwelling at 204 Columbia Heights, for the United Cities Realty Corporation.

E. Rutzler Co., of 404 East Forty-ninth Street, Manhattan, has secured the heating contract in the new $40,000 residence of Chas. E. Danforth, at 18 East Seventy-second Street.

Hemlin & Smith, of Manhattan, will do the plumbing in the new depot and receiving station of the American Express Co., in Brooklyn.

Philip Yockel, of 756 Fox Street, Bronx, has the contract for the heating work in two new apartment buildings at University and Burnside Avenues.

George Schmidt, of 703 East 156th Street, has the contract for the plumbing and the Efficiency Heating Co., of 391 East 149th Street, that for the heating in a new auto storage warehouse at 134th Street and Third Avenue, New York.

Andrew A. Walker and Harry B. Lentz, of the Peerless Selling Co., of Evansville, Ind.—From "Domestic Engineering" Photo, taken at the Atlantic City Convention of the National Association of Master Plumbers.

The Savoy Plumbing Co., of 1441 Broadway, Manhattan, will remodel the plumbing in the Theatre Francais on West Forty-fifth Street.

The Kelsey Heating Co., of 103 Park Avenue, Manhattan, will install heating systems in five residences for John T. Brook Co., in Pelham Manor. J. Johnson, of Mt. Vernon, has the plumbing.

Edward J McCabe Co., of 1205 Lexington Avenue, Manhattan, have the contract for the plumbing in an addition to F. V. Skiff's residence, at Short Hills, N. J.

W. G. Cornell Co., and Baker, Smith & Co., both of Manhattan, have the contracts for plumbing and heating, respectively, in the new passenger and express building of the New York Central R. R., at Poughkeepsie.

George W. Burnes, 180 Bay Nineteenth Street, Brooklyn, has the contract for the plumbing in the new Y. M. C. A. building, at Fourteenth Avenue and Fiftieth Street.

J. H. Merritt Co., of 48 Cliff Street, Manhattan, will install the heating system in a storage and office building on Cliff Street.

B. Kaplan, of 1478 Bryant Avenue, Bronx, will install plumbing systems in four apartment buildings at Avenue Q and Twelfth Street.

Joseph Miller Co., of Manhattan, has secured the contract for plumbing in Henry Bendel's new $100,000 residence at Great Neck, L. I.

Watterson & Carty, of 37 Old Broadway, Manhattan, will do the heating in a new apartment operation on 186th Street for Riverview Construction Co. McAdam & Bajart have the contract for plumbing.

James McCullaugh, of Manhattan, has the contract for plumbing in a new $400,000 store and office building at Madison Avenue and Forty-fifth Street. E. Rutzler Co. will do the heating.

Weber & Hamilton, of Long Island City, will install the plumbing in a new apartment operation at Fourth and Graham Avenues, for A. Petrosky.

Other Cities in the State.

Thomas Leary Co., of Little Falls, has the plumbing contract for the new Little Falls City Hall. The building will cost about $125,000.

J. F. Weinheimer, 308 Genesee Street, Buffalo, will install the plumbing and heating systems in a new residence and garage for Jos. Ernst, on North Parade Avenue.

William Waldow, of 911 Fillmore Avenue, Buffalo, will do the plumbing and heating in A. W. Manzek's new residence on Willow Lawn Avenue.

A. J. Batt & Co., of Buffalo, have secured the heating contract on a store and dwelling building at 1392 Fillmore Avenue. They also have the contract for plumbing and heating in a new $14,000 residence at 87 Oakland Place for G. A. Jackson.

Dark & Co., of 654 Main Street, have the plumbing and Frontier Plumbing & Heating Co., the heating contract in the new Garett Club, at Cleveland Avenue and Delaware Street, Buffalo.

Robert Calder Co., of Rochester, will do the heating in the new public school at Gates, N. Y.

J. R. Sheehan Co., of Schenectady, will do the plumbing in the new foundry annex of the American Locomotive Co.

Cornelius Dwyer, of 12 Chuctanunda Street, Amsterdam, will install plumbing and heating systems in a new bank building on Main Street.

Frank J. Wintermantel, of 44 Main Street, Lancaster, will do the plumbing and heating in the American Hotel in that city.

Robert Calder, of 75 Exchange Street, Rochester, has

the heating in George Ryan's new residence on Golf Side Parkway.

G. H. Rochards, of Corning, has the contracts for plumbing and heating in the new New York Central R. R. car shop in that town.

H. C. Petersen Co., of 20 Oneida Street, Utica, will do the plumbing and heating in a new business block on Elizabeth Street, for Langdon & Hughes. This company also has the contract for similar work in Thomas R. Proctor's residence addition on Genesee Street.

E. L. Falger, of Roslyn, will do the plumbing and steam heating in E. P. Davis' new $15,000 residence.

R. T. Ford Co., of Rochester, has the contract for installing plumbing and heating systems in Bastian Bros.' new factory on Mt. Hope Avenue.

Hickey Bros., of Syracuse, will install a heating system in a new theater and office building in Olean for Bordonaro Bros.

J. B. Witte, of Utica, has the contract for the plumbing in the new Trinity R. C. Church parochial school building. Thos. Breen Co. will install the heating.

Mohawk Heating Co., of New York City, will install heating systems in two new apartment buildings on Whiteboro Street, Utica, for E. S. Damsky. Burke & Shaughnessy, of Utica, have the contract for the plumbing.

L. M. Havens will do the plumbing in a new business block for George Georgetson, at Olean.

Hickey Bros., of Olean, have the plumbing and heating in the new St. Bonaventures College gymnasium and power plant at Allegheny.

Ohio

Cincinnati and Vicinity.

While the records of the building commissioner's office show a heavy falling off in building in Cincinnati for August, as compared with August of last year, the decline is more apparent than real, as the excess in valuation last year was largely due to the fact that the courthouse, valued at $2,500,000, was included in the permits for August. In the number of permits August, 1916, was considerably ahead of last year, 1,546 permits being issued as against 1,384 in the corresponding month of 1915, and 1,227 in 1914. The amount of work going on is very satisfactory to all members of the building trades, as it promises activity which will extend practically unbroken through the winter months.

The Samson Realty Co., recently organized by C. I. West, H. C. Hubbell and others, is planning the development of a tract which it owns along Reading Road, by the construction of about twenty houses, of a total value of $170,000. Work has already been started on several of the structures, which are of the St. Louis flat type.

Harry W. Dressler, a plumber of Norwood, has filed a voluntary petition in bankruptcy in the United States District Court at Cincinnati, with liabilities of $2,260.05 and assets of $1,481.

E. H. Morgan landed the plumbing contract for some work to be done in connection with the establishment of orthopedic and neurological clinics in Wards A and B of the general hospital. Architects Samuel Hannaford & Son, who designed the buildings, awarded the contract with a number of others on the same job.

Safety Director Friedlander, of Cincinnati, had to explain some things recently to a delegation of union men who called to complain of firemen doing plumbing and other work around the engine houses. He pointed out that the engine houses are practically the homes of the firemen, and that therefore they have the same right to do odd jobs around them as men have to do similar work around their own homes. The explanation is said to have been satisfactory to the union men, especially as the director promised to employ union men, plumbers as well as painters and others, whenever necessary.

F. Niesen & Co. have secured the contract for the plumbing in new buildings to be constructed at the plant of the Ubiko Milling Co. to take the place of those destroyed by fire some months ago.

The accompanying picture shows a good likeness of Joseph R. Stratton, a successful master plumber of Salem,

Joseph R. Stratton, of Salem, O., with a Piece of Pipe and an Indian with a Pipe of Peace.

Ohio. The other gentleman in the picture is an Indian. In sending us this photograph Mr. Stratton writes:

"The Indian with his pipe of peace,
Is passing fast away,
But the plumber with his piece of pipe,
Is surely here to stay."

The Tuec-Troop Co. has been incorporated in Cincinnati by E. J. Baumgardner, Edward Ortgier and others, with a capital stock of $10,000, to conduct a general plumbing business.

George Wilkinson, a master plumber of Portsmouth, Ohio, was exonerated of a charge of tapping a sanitary sewer without a permit, after a spirited hearing before the mayor, in which a controversy between Mr. Wilkinson and Plumbing Inspector Frank B. Burt developed. It seemed, however, that a permit was taken out for the work the morning after the tap was made, and it was explained that the tap was made immediately after the excavation was completed on account of the treacherous nature of the ground, which it was feared would cause a cave-in.

A master plumber of Niles, Ohio, had to pay a fine of $10 recently after being arrested on a charge of refusing to secure permits to do work in several residences where he was handling plumbing, on the ground that the houses were his own property. The mayor refused to consider this as a reason for failing to comply with the provisions of the state plumbing code, which was placed in effect in Niles as well as in other towns some time ago, and the fine followed.

Toledo.

The growth of Toledo continues along phenomenal lines despite the difficulties of transportation and labor with which every line of business is confronted. Permits were issued for $1,346,197 worth of building during the month of August. Permits for the entire eight months of 1916 had a total valuation of $7,254,428, an increase of about 50 per cent over the same period of last year. This has all meant good business for the plumbers, as practically all new construction in Toledo, even in the outlying districts and new allotments, are of modern construction and require up-to-date plumbing. Few new homes are being erected anywhere in Toledo without baths and lavatories. All of this has made plenty of business for plumbers generally and the business has been pretty evenly divided, everybody securing a fair share of the trade. Factory additions, office and other business structures, a nurses' home, working girls' home and a number of schools have added to the general call for plumbing and helped to scare the wolf for local plumbing concerns.

The Eagen Bros. Co., of Erie Street, has leased the old Eagle Brewing property on Michigan Street near Walnut. This large two-story brick building, half a block in length, now occupied by a garage, will be used by the Eagen Bros. Co. for storage purposes. This plumbing concern has been growing rapidly and only a couple of years ago built the elegant structure which is now occupied by the company.

A plumbing contract of importance will be that of the new building which will occupy an entire city block to be erected for the Lasalle & Koch Co.'s large department store. The new building, it is estimated, will cost $746,000. The new building will be eight stories in height with a 120-foot frontage on Adams Street and a 255-foot frontage on Huron Street.

New Jersey

The contract for plumbing and heating in the new Christ Church parish house at Glen Ridge has been awarded to Fentzlaff Engineering Co. of New York.

Oliver Drake, of 78 Park Place, Morristown, will install the plumbing and heating work in a new garage for George Fraser on Woodland avenue.

O. S. Dunigan, of Rahway Avenue, Woodbridge, has the contract for plumbing and heating in a new warehouse for S. B. Brewster.

Charles Simkin, of 141 Fayette Street, Perth Amboy, will do the plumbing and heating in Rottenberg's new building on Madison street.

The new Iselin school plumbing will be done by Owen S. Dunigan, of Woodbridge. Atlantic Heating & Ventilating Co., of Hempstead, N. Y., will install the heating.

W. W. Davis, of Bradley Beach, will do the plumbing in a new residence being erected for Mrs. Georigiana Pearson at Belmar.

James F. Hanley Co., Ferry Street, Newark, has the contract for the plumbing and heating in a new garage for Gus. Schmidt on Elizabeth avenue.

Desmond & Connell, of 204 Union Avenue, Elizabeth, will install the plumbing in a new store building at 121 Broad Street.

Andrew Anderson, of 409 Smith Street, Perth Amboy, has secured the heating and plumbing in a new apartment operation at Smith and Goodwin Streets, for Alex. Horoschack.

Geo. M. McKeag, of New Brunswick, has been awarded the contract for the plumbing and heating work in Louis Wolfson's new residence at Latham Track.

Walter A. Lawson, of Newark, has the contract for installing a heating system in E. C. Klipstein's residence in East Orange.

Herman B. Shaefer of 77 South Thirteenth Street, Newark, will install the plumbing in two apartment buildings at 355 Plane Street for Joseph Mann.

Sanders & Co., of 815 Lynes Street, West Hoboken, have secured the contract for the plumbing in the new building being constructed for the National Bank of North Hudson.

J. J. Turbett, of Newark, and J. A. Sproules, of Jersey City, First Vice-President and President, respectively, of the New Jersey State Association of Master Plumbers.—From "Domestic Engineering" Photo taken at the recent Outing of Bayonne Master Plumbers' Association.

Kentucky

Louisville and Vicinity.

It has been officially announced by Secretary W. H. Matlack, of the Louisville Master Plumbers' Association, that the proposal to hold a second picnic this year in place of the one marred by rain, has been rejected, and that no further outings will be held by the association until next season.

The meeting of the Louisville Master Plumbers' Association, scheduled for Labor Day, was postponed, no one caring for business on a holiday. The meeting was held on Tuesday evening, and with the exception of general discussions and routine matters nothing of importance transpired.

W. O. Head, president of the Louisville Water Co., has announced that the company will shortly be ready to advertise for bids on a new pumping station as an adjunct to the present plant. The new addition is to cost in the neighborhood of $600,000. During the recent hot spell in Louisville the daily consumption was 62,000,000 gallons per day, or 2,000,000 in excess of the capacity of the present plant. It is planned to increase the capacity 100,000,000 gallons a day.

J. W. Oliver, of the Ahrens & Ott Mfg. Co., as chairman of the Insurance Committee of the Louisville Board of Trade, has offered the services of his committee to the Kentucky Actuarial Bureau and the Kentucky Fire Insurance Commission to aid in arbitrating a present controversy between the state board and the bureau, representing the insurance companies. The same committee was instrumental in settling a big insurance crisis about two years ago.

Fred J. Riebel, of the Ahrens & Ott Mfg. Co., recently appeared in an unusual role at the Clifton Methodist Church, when he took the pulpit and spoke on "The Gospel of Economy." Mr. Riebel has spoken in various parts of the state, and is becoming a well known orator.

Gray & Tomppert, of Louisville, have a big contract for the Speed Realty Co., calling for 30 closets, 27 lavatories, 13 sinks, 2 urinals and other fixtures.

F. A. Clegg & Co., of Louisville, are installing a heating plant for the Mansard Hotel, Bowling Green, Ky Charles Ballard, of Louisville, is superintending the work of installing the steam pipes, etc.

A. J. Anderson, head of A. J. Anderson & Co., heating and ventilating engineers, was one of the members of the committee upon arrangements which handled the annual outing of the Louisville Builders' Exchange, at Hike's Point, Ky., on Labor Day. A big chicken dinner various liquid refreshments, and a number of athletic events aided greatly in making the day a success.

A 60-horsepower boiler and other equipment will shortly be installed for Simon Pontrich, a florist at Twenty-eighth Street and Greenwood Avenue, Louisville. Mr. Pontrich expects to use steam.

Edward D. Hannan has been pushing work on the Washington school building and has about completed the ventilating and plumbing remodeling, which had to be finished in time for the school opening on September 11th.

A. J. Anderson, F. E. Good, George W. Schardein and E. G. Heartick were scheduled to deliver talks at the Rotary Club meeting on September 8th, which was characterized as "Mechanical Equipment Day."

J. Earl Henry, Architect of the Board of Education, has been notified of his recent election to active membership in the American Society of Heating and Ventilating Engineers.

Other Cities in the State.

The Winchester City Council, Winchester, has called a special election for November 7th to pass on the question of issuing bonds to the amount of $180,000, and to run for thirty years at 5 per cent. It is proposed to use this money in establishing a muncipal water system.

The Board of Education, of Lexington, has let a contract to the Columbus Heating & Ventilating Co., Columbus, O., for heating and ventilating the new high school building. The contract price is $6,500.

Dan Morgan has been appointed manager of the Elizabethtown plant of the Kentucky Utilities Co., to succeed J. P. Todd, who has been transferred to the plant at Bowling, Green, O.

Massachusetts

After nearly half a century in the plumbing business in New Bedford, Thomas J. Gifford, one of the city's best known business men, has sold his stock at auction and closed his establishment.

George H. Taylor, of Wakefield, has been awarded the contract for installing a new heater in the basement of the Wakefield town hall building. The old heating system was recently condemned and Mr. Taylor was the lowest of several bidders for the new plant.

Reardon Bros. & Co., of Lynn, have recently secured two large heating and ventilating sub-contracts from the C. S. Cunningham Construction Co., which is making changes at the Whiting and Shepard schoolhouses in Lynn.

Harry A. Ashmun, Manager of the Pipe Tool Division of the Greenfield Tap & Die Corporation, Greenfield, Mass.—From "Domestic Engineering" Photo, taken at the recent Atlantic City Convention of the National Association of Master Plumbers.

Practically all of the Lowell plumbing concerns entered bids for plumbing in a new ten-room schoolhouse addition soon to be erected in that city. J. F. McMahon & Co.'s bid of $4,276.75 was the lowest and it is expected the contract will go to that concern when finally awarded. Other bidders for plumbing were: Hobson & Lawler Co., $4,925; Farrell & Conaton, $4,674; E. T. Shaw Co., $4,461; J. J. Spillane & Co., $4,500; Welch Bros., $6,078; Chisholm Co., $4,876; Scott & O'Day, $4,298; John A. Cotter & Co., $4,932; T. Costello Co., $5,251; H. H. Wilder & Co., $5,254; and J. J. Mullaney & Co., $4,363.

A palatial residence, to cost about $130,000, will be built for President MacLaurin of the Massachusetts Institute of Technology, ground for which has been broken in front of the dormitories along the Esplanade at Cambridge.

Several new corporations have recently been formed and have filed papers with the secretary of state at Boston. Included in the list are R. T. Allen & Bros., of Saugus, plumbers and hardware dealers; and the J. Wallace Grace Co., plumbers, of Wakefield. The incorporators of the former concern were Robert T. Allen, H. C. Allen and J. B. Allen. J. Wallace Grace, of Wakefield, is president and treasurer of the last named corporation and his associates are William W. Grace and A. E. Grace.

Maine

Contracts for the plumbing, heating and vacuum cleaning systems in the new Portland high school building have recently been awarded by the city council. The plumbing and vacuum contracts were placed with M. A. Dame & Son Co., of Boston and Lynn, Mass., for $38,190, and the heating with Wiley & Calhoun, of Portland. The bids for the plumbing and vacuum systems were as follows: M. A. Dame & Sons Co., $38,190; Scribner & Iverson, Portland, $39,954; P. J. Sullivan & Co., Boston, $39,467; Myers-Mahoney Co., Portland, $46,067.59. There was considerable opposition to awarding the contract to an outside firm and legal representatives of several of the bidders appeared before the city government in regard to the matter before the contract finally was awarded.

Wiley & Calhoun, of Portland, also has been awarded the contract for installing a new heating system in the Allen's corner schoolhouse in Portland, being the lowest of several bidders.

One of the features of school improvement being urged by the rural school agents of the Maine state school department is the installation of proper heating and ventilating equipment in the one-room rural schoolhouses. A majority of the rural schools in the state are now heated by stoves, generally of the so-called box type, and most of the schools have no arrangement for ventilation except by means of the open window.

The plumbing, heating, stove and hardware business, conducted at Ellsworth by the late F. B. Aiken, has been sold to Harry C. Stratton, who until a few years ago had conducted a similar business in Ellsworth.

Connecticut

William P. Kirk, a plumbing contractor in Bridgeport, has purchased a large piece of property on South Main Street in that city and announces that he is soon to erect a large business structure. The building will be two stories high with four stores on the street floor and offices on the second floor. Mr. Kirk's plumbing establishment wil occupy one of the stores.

Seyfert Bros., of Bridgeport, have plumbing and heating contracts for two two-family houses to be erected on Herkimer Avenue, Bridgeport, for Burnweit Bros.

Arthur R. Saunders, a Bridgeport heating contractor, has formed a partnership with H. L. McGuire under the firm name of Saunders & McGuire, and they have opened a plumbing establishment at 517 East Washington Avenue, Bridgeport. The new firm already has contracts for plumbing and heating in three houses for the Whitney & Langlands Co., and plumbing and heating in a house on Cleveland Avenue for August Wrinn.

J. Reilly, Jr., of Bridgeport, will do the plumbing and heating in connection with changes to be made in a business building on Grovers Avenue, Bridgeport, for Percy Bartram.

The contract for plumbing and heating in the residence of M. J. Gibbud on Whitney Avenue, New Haven, has been placed with Farren & Garrity, of that city.

Barlow Bros. Co., of Waterbury, has the contract for plumbing and heating for a two-apartment house on Farmington Avenue, Waterbury, for J. J. Saginome.

The Charles Thatcher Co., of Waterbury, has been awarded the contract for plumbing and hot water heating in a house on Columbia Boulevard for C. A. Ketchen.

Idaho

The Idaho Plumbing Co., of Boise, was the successful bidder for the plumbing and heating of the new addition to the grammar school at Kuna, Idaho. The contract price for the work is $2,463.

Naglay Bros., of Kuna, have secured the contract for furnishing 16,000 feet of piping for the new water system.

David W. Burnside has been made plumbing inspector at Lewiston. He will also act as assistant to the water superintendent.

The city council of Idaho Falls is now considering plans for the erection of a filtration plant to be operated in connection with the water system.

Washington

The School Board of Port Townsend has awarded the contract for installing the heating plant in the Central School to John Lille, of Port Townsend.

Lacrosse recently voted bonds in the sum of $6,000 for the addition to the local school and for installation of a heating plant in same.

Garrison & Thaldorf, of North Bend, Wash., were the successful bidders for the plumbing for the new school gymnasium at Snoqualmie. Their bid was $3,291.

Louisiana

The accompanying cut shows an up-to-date display which can just now be seen in the show window of the

The Interesting Show Window of the New Orleans Railway & Light Co., at New Orleans, La.

New Orleans Railway & Light Co., at New Orleans, La. It is said that this window attracts the attention of nearly everybody who passes by.

Arizona

The city council of Douglas has passed an ordinance providing for the proper installation of plumbing fixtures and compelling their connection with the sewer system.

C. T. Roach and Ott Kettleson, proprietors of the Oatman Tinning & Plumbing Co., of Oatman, have dissolved partnership.

California

San Francisco and Vicinity

While the large work for the year is already pretty well known and very largely contracted for, there appears to be an improvement in the amount and quality of residence building now going on. This is true not only of San Francisco but also concerning the suburban cities about San Francisco Bay as well; and with fair weather throughout the fall, there should be two months of active building still before the trade. A freak storm struck central California this week, giving the state its first real electrical storm in some thirty-five years. No material damage was done, however, and as the weather has cleared, a pleasant fall is hoped for.

Monson Bros. of this city were the lowest bidders on the general contract for the new high school building at San Jose, Cal. The plumbing and heating bids will be awarded in the near future.

Proposals have been called for for pipe, pumps, steam traps, etc., for the Mare Island Navy Yard at Mare Island in the San Francisco Bay.

Heavy importers of pipe and similar goods have been informed that the Interstate Commerce Commission has postponed until December the going into effect of the increased freight rates, which were to have gone into effect on September 1st.

O'Brien Bros. have completed plans for the three-story and basement frame apartment house to be erected in the Western Addition at a cost of $35,000. The building will contain forty-two rooms, arranged in two and three-room suites, each with bath.

Col. George Williamson, construction quartermaster at the Presidio in San Francisco, has recommended, to the War Department, construction and improvements at the Presidio calling for an expenditure of approximately one million dollars.

Other Cities in the State.

G. J. Moore, formerly of Moore & Cook, plumbers of Eureka, but who has been in business at Healdsburg, Cal., for some time, has disposed of the business at the latter place, and may go into business in Eureka again. He is at present looking over the situation.

Ellerington & Myers, plumbers of Oroville, have completed the installation of the heating system in the Oroville Grammar School two weeks ahead of time. An oil-burning system was installed.

I. W. Vanderbilt, a plumber of Auburn, is preparing to move into another location where better facilities will be enjoyed.

The board of trustees of Orange has passed an amendment to the plumbing law, providing for the drainage and venting of water-closets, lavatories, etc.

The city council of San Diego is considering a plan for the laying of a pipe line from La Mesa Dam to connect the city's main distributing system. The estimated cost of the work is $125,000.

If permission can be secured from the War Department, the city authorities of Redwood City will construct a swimming pool in the tidal channel, about 100 feet wide and a block long. The proposed pool can be filled with each incoming tide. If the War Department is favorable to a change in the flood gate, bath houses and other improvements will be made.

The Visalia Plumbing Co., of Visalia, has been awarded a contract for the plumbing of the first of three new school buildings to be erected there.

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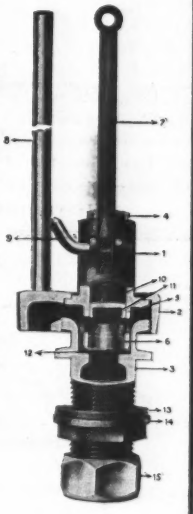

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Works equally well on high or low pressures.

Only ball cock with adjustable re-fill tube.

Seat projects into top of valve in such a manner as to assure positive alignment and perfect seating of piston.

Made of highest grade metal with hardware bronze seat.

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Syracuse, N. Y.

"Ruffin"
"Atlas" Seat No. 9
Hinge No. 110

For close Roughing or Roughing in. Hinge has Offset of 2½ in. Which will Allow Seat To rest In upright Position. Get sample.

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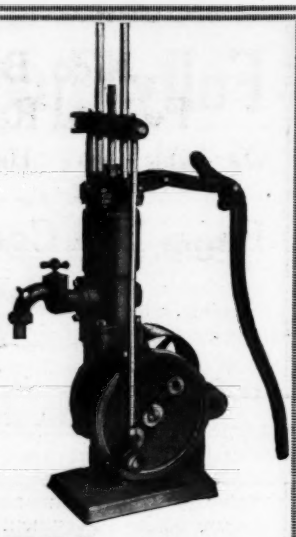
For Wells 300 ft. Deep

This is our Fig. 1717, working head for operation by hand, windmill, electric motor or gasoline engine. It is adapted for service in wells up to 300 feet deep and will be fitted with air compressor for hydro-pneumatic service when desired.



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Are made in "more than a thousand styles and sizes" for ALL pumping requirements. Our new 360 page pump Catalogue No. D-25 will be sent on request to any interested plumber.

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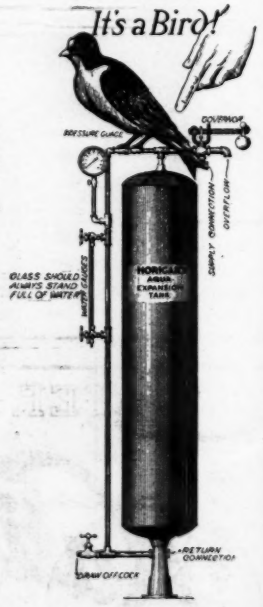
Horigan's Aqua Expansion Tank



Nothing can be more simple than this appliance on a Hot Water House Heating System.

No other System allows such small Mains or Risers to be used.

You need no other Expansion Tank, Generator or Specialty of any kind. Regular goods that you have in stock is all you need.

It makes Hot Water Home Heating cost no more to install than Hot Air.

Does all the work alone on a Hot Water job.

Real small pipes (not medium small) cannot possibly be used successfully with other Generators. They are all trying it, but are falling down.

The Expansion must be taken care of, and Horigan's Aqua Expansion Tank takes care of it.

Try one and you will sure buy another. Write for the facts today.

Horigan Supply Co.

316 South 4th Street
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HOW WISCONSIN TEACHES THE THEORY AND PRINCIPLES OF PLUMBING AND SANITATION.

From an unlearned apprentice or journeyman to a plumber well versed in the principles and practices of plumbing is the road many ambitious artisans hope to travel. For very many of these its passage is hindered by lack of intelligent direction. This handicap to aspiring plumbers has been recognized by the University of Wisconsin in the establishment of a comprehensive course in plumbing, open to students anywhere, but taken mainly by residents of Wisconsin. Started less than two years ago with but two students, it now has sixty-four active students enrolled, and thirty-one others have successfully finished the lessons and received certificates. Thus in the brief period named, nearly one hundred have sought the university's aid towards the mastery of this, one of the most skillful of trades and a potent factor in the promotion of the public health.

This course, which is offered by the Extension Division of the university, is designed to teach, through correspondence, the best accepted practice in planning and installing sanitary plumbing and also the principles upon which the designs of plumbing systems are based. In laying out this course of study it was recognized that most of the plumbers of the state had learned the trade by the apprenticeship system which gives no opportunity to learn the theory and principles of sanitary plumbing. At the same time they must pass an examination on the theory and principles before they are given a license by the state to practice their trade. This condition creates a need for some method by which the plumbers may pursue a systematic study in the theory and principles of plumbing, and the university extension course is designed to meet this need. The necessity for such study is recognized in the State Plumbing Code by making an educational qualification a prerequisite to obtaining a license.

For a fee of $8 a student in plumbing may acquire a practical education in scientific plumbing and drainage. The course is divided into sixteen parts or assignments. Each contains as much study material as can be learned by the average plumber in three weeks of night study, so that the entire course requires about one year to complete. The written recitations, which the student sends in, include answers to the questions upon the lesson, problems relating to different phases of plumbing work, and sketches and drawings of various kinds of plumbing installations. It is believed that any plumber taking this course who passes the final examination in it will find no difficulty in passing the State Board of Health's examination on the theory and principles of plumbing. A complete textbook is studied. The course, while designed to conform with the Wisconsin State Plumbing Code, contains no instruction that is contrary to established practices in other states. Students are taught what constitutes good plumbing and what the Wisconsin State Plumbing Code demands of the plumber. In drawing up the course the Extension Division was aided by Frank R. King, state plumbing inspector, who directs the plumbing division of the State Board of Health, and care was taken to make it accord as far as possible with the code's requirements.

Upon finishing the course successfully, the student may take a final examination, and upon passing it is awarded a certificate testifying that he has completed the course. The State Board of Health rules that three years' experience as a helper or apprentice shall constitute a reasonable time in the business; or the candidate

for license must be a gradute of a recognized trade school in Wisconsin which gives at least a two years' course. Applicants for journeyman's license who attend a recognized trade school in Wisconsin and who are not graduates of such school will be given full credit for the work done in the trade school as a part of the required three years' experience as a helper or apprentice. Graduates of the University of Wisconsin extension course in plumbing will be given six months' credit as a part of the required three years' experience as a helper or apprentice. Work done in night schools will be given suitable credit. Graduates of the extension course desiring to qualify for master plumbers will be given six months' credit as a part of the required three years' experience as a journeyman. Thus does the university co-operate with the State Board of Health in improving the educational and professional qualifications of plumbers in Wisconsin.

Correspondence study in plumbing has three main purposes: To induce prospective plumbers to study; to teach the fundamentals of the trade, imparting a knowledge of how to figure plumbing jobs and the requirements of a sanitary system; and to install plumbing systems properly, with full regard for good drainage and ventilation and for economy.

The Wisconsin course embodies study of the following subjects and their subdivisions:

The Drainage System: Requirements of a plumbing system; the house sewer; the house drain.

Proportioning the Drainage System: Kinds of fittings; velocity of flow; drainage of storm water.

Details of House Drain: Yard and area drains; rain leaders; connections to house drain; siphons and siphonage.

Soil, Waste, and Vent Systems: Stacks and branches; two-pipe systems of plumbing; loop or continuous system; size of soil and waste and vent stacks.

Traps and Trapping: Siphonage of traps; effects of back pressure; grease traps.

Connecting Fixtures: Refrigerator wastes; materials for traps, slip joints; vent connections; back venting; kitchen sinks and laundry trays; clothes washing machines; refrigerator wastes.

Testing Drainage Systems: Methods of testing; test plugs; testing in sections; final tests; mechanical discharge systems.

Flow of Water: Classification of water; testing water

R. C. Gebhardt, of the Ball Seal Generator Co., Easton, Pa.; R. C. Barber, Manager of the Auto Ball Cock Co., Hazleton, Pa.; H. M. Grossman, of the Lord & Burnham Co., Irvington, N. Y.; and Chas. A. White, President of the Keystone Supply & Manufacturing Co., Philadelphia.—From "Domestic Engineering" Photo taken at the Atlantic City Convention of the National Association of Master Plumbers.

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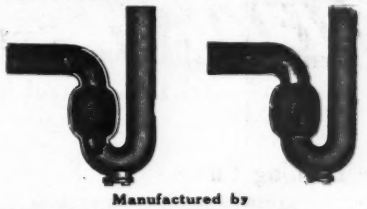

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This manual and scale offer a new and simple way of computing radiation in a few minutes, based on the actual B. T. U. transmission. This places at your instant command information and data ordinarily available only to the best heating engineers and eliminates all guess work from your estimates.

Send $5.00 and we will mail scale and manual; if after 10 days' trial you are not satisfied return manual and scale to us and we will refund your money.

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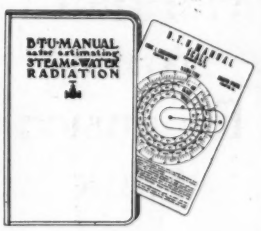

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TANKS
National
SYSTEMS
A Guaranteed Line
MANUFACTURED BY
NATIONAL STEEL TANK & MFG. CO.,
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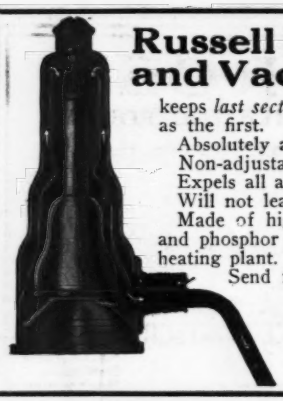

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keeps *last section* of radiator hot as well as the first.

Absolutely automatic.
Non-adjustable.
Expels all air and prevents its return.
Will not leak steam or water.
Made of highest quality steam metal and phosphor bronze. Will outlive the heating plant.
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Efficiency

The rapidly increasing demand for

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is due to its superior features.
Prevents clogging of pipes by separating and retaining all grease from waste water.
Easy to remove grease through the spacious handhole.
Furnished either round or square.
Price reasonable.
Write for particulars.

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Manufacturers of

Malleable Iron Fittings and Drainage Fittings.

Special Malleable and Grey Iron Castings.

DETROIT, MICHIGAN

Write for Catalogue

for hardness; effects of water upon metals; absorption of gases by water; measurement of water.

House Supply System: Meters; water consumption, kinds of pipe; water hammer.

Details of Water Supply: Cocks and valves: service connections; sizes of water pipes; distribution.

Filtering and Softening Water: Pumps; fire lines; filtration and filters; water softening apparatus.

Water Heating Apparatus: Properties of hot water; circulation of water; water backs; water heaters; connections; garbage burners.

Ice Water Supply: Cooling tanks and coils; size and material; distribution of ice water; outdoor fountains; refrigerating machines.

Water Supply for Suburban Places: Windmills; hydraulic rams; storage tanks; pneumatic water supply.

Plumbing Fixtures: Requirements for sanitary fixtures; sanitary closets; flush tanks; ventilation of closet compartments; urinals; hospital slop sinks; kitchen sinks; laundry trays; lavatories; bathing apparatus.

The lessons are printed and the questions mimeographed. Not all plumbers are good draftsmen. In this course a certain amount of drawing is introduced by prepared blue or white prints of floor plans with plumbing lines and fixtures installations shown, leaving it to the student to fill out the rest of the plan and illustrate the proper means of connecting the fixtures.

The extension course is given under the direction of Professor E. M. Shealy, at Madison. Journeymen and apprentices comprise the bulk of the students, the others being master plumbers, estimators, bookkeepers, and architectural engineers. Some of the last named take these studies while employed with large contracting firms in eastern states. There is also a class composed of journeymen and apprentices, now numbering thirty-two students, conducted in Milwaukee, by a local instructor, Herman E. Heine, a member of the committee of state plumbing examiners. Answers to the questions are read by this teacher and also by the Madison instructor, permitting a double supervision of the student's work.

As a class, plumbers are not inclined to study. This is a common observation and one not difficult to understand. After working hard all day, nighttime finds them ready for rest and freedom from workaday troubles. For those in the trade who think they know enough about it already, and disdain further study, correspondence courses have no application. Such courses are for plumbers, who are not content to stay at the bottom or even halfway up the ladder, but are for those who strive to reach the topmost rung. The plumbing lessons act as an incentive to study, and plumbers who enter seriously upon the course are quick to recognize the force of the inducement.

Apprentices working under a journeyman plumber may learn how to do certain manual duties, but this kind of instruction teaches little of the principles on which plumbing and drainage are based. Why the laying of a four-inch pipe is preferred over a three-inch or six-inch pipe may be understood well enough by the journeyman or master, but unless the apprentice is one of the kind who intend to advance in the trade, he will probably remain ignorant of the basic reasons for that particular installation. Unless the journeyman has a direct interest in the apprentice, the latter is often neglected. It is probably true that the indifference and unwillingness of many journeymen to teach the trade to apprentices have tended to discourage the apprentice in qualifying for the duties of a plumber. Without opportunity to learn when they want to, much of the work the apprentices perform

becomes automatic, monotonous, meaningless and uninteresting, leaving them without insight or skill in trade processes. Under these discouragements, they often seek a change of employment and a larger income.

Outside of correspondence courses there has been little opportunity for plumbers to receive instruction in the theory and practice of plumbing and sanitation, and the effect has been to discourage initiative and to turn the planning of plumbing systems over to the sanitary engineers and architects, who themselves are trained in technical schools. If this condition is allowed to continue indefinitely, the tendency will be to give the trade the nature of semi-skilled labor and directing. If competent plumbers are to rise from the ranks of apprentices they must have opportunities for training and advancement in the trade.

To be a competent journeyman a man must have a comprehensive knowledge of the principles of plumbing and drainage. He must understand the meaning of plumbing terms and the reasons why one process is preferred over another; be able to read working drawings, understand different types of plumbing fixtures and how to connect them, and be thoroughly familiar with the regulations concerning traps and vents. He should know the dangers of dead ends, the proper use of an iron pipe for a house drain to comply with the code; the requirements for surface and rain water connections, floor drains and fixture wastes. He should know how to make joints in all kinds of pipes; how to wipe a joint properly; how to bend lead pipe without kinking it; the proper proportions of lead and tin in solder for various purposes; the aims and construction of traps of various kinds, and the reasons why a plumbing system should be ventilated.

A journeyman, under the Wisconsin code, should know how to discover leaks in plumbing and drainage systems; should understand the factors to be considered in determining an adequate water supply for a plumbing installation; should know the requirements in constructing toilet rooms, and should be familiar with the design of water supply and sewage disposal systems, septic and biological tanks, and the rules governing the use of privy vaults. A knowledge of the regulations governing plumbing inspections and tests, and of the sanitary requirements for all buildings, is necessary.

The journeyman must be able to install complete plumbing systems in various types of buildings, which implies a knowledge also of building construction. He must be able to test his drainage system with water, air, smoke or chemicals. He must be versed in physics, especially the effect of heat and cold on lead, tin, brass and iron, and such other factors as are detrimental to plumbing materials. He should understand the water hammer, pumps, siphons, traps and such parts of chemistry as deal with lead, tin, brass, red lead, white lead, litharge, cements, fluxes, sewer gas, septic tanks, water contamination, and electrolysis. And he should have a knowledge of the laws and rules governing examinations and of the rulings on the scope and meaning of various sections of the law and code.

Under present conditions it is practically impossible for the apprentice to gain all this knowledge while working at the job. Hence there is an excellent field for an outside agency like a university extension course or a recognized trade school course to supply this instruction. It is the opinion of many plumbers who have given this subject thought that the trade must combine a thorough knowledge of the sciences underlying the principles of plumbing and the ability to perform the practical work of designing and installing it.

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DOWN DRAFT HEATING BOILERS
For Steam, Water, Vapor, Vacuum, Heating
Six Points of Superiority:
1. Magazine Feed.
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BOWLUS CLOSETS
The Masterly operation of the "JEWEL" Combination (shown here)
is guaranteed to give five years of superior service. That's the confidence we have in the "Jewel."
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Write for it.
The Bowlus Manufacturing Co.,
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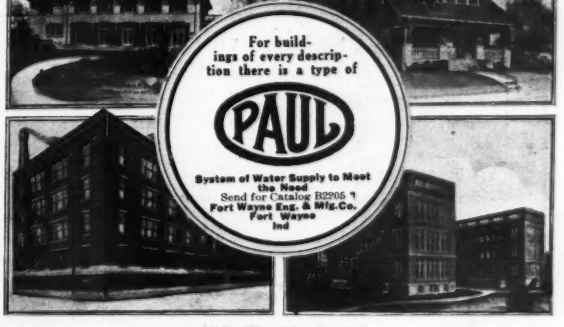
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System of Water Supply to Meet the Need
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Josam Combined Trap and Drain U. S. Government Type

We Make "DOUBLE DRAINAGE" Drains to Meet Every Requirement
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Makes a Tight Joint With the PIPE By turning up the screw bolt A
OVERTON ADJUSTABLE FLASHING ADJUSTS TO ALL PITCHES
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BEST and CHEAPEST

Made of 28 gauge, best quality galvanized iron. Will fit OVERSIZED as well as standard pipe. A can of INDESTRUCTIBLE, NON-CRACKABLE CEMENT is attached to each flashing to fill up any defects in the pipe.

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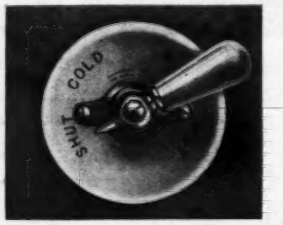

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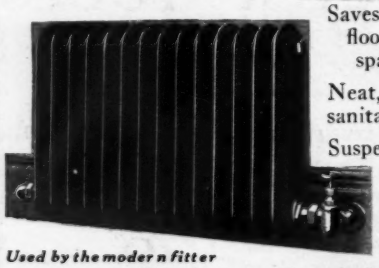

Saves floor space.

Neat, light and sanitary.

Suspended from wall by means of special invisible bracket.

Used by the modern fitter

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AMERICAN PRESSWELD RADIATOR CORPORATION
General Offices and Factory: DETROIT, MICH.

In Demand Everywhere

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K. K.

—the chemical compound that cleans closet bowls the sanitary way.

No fumes, odor or dirt.

No scrubbing. Shake a little K. K. into closet bowl and flush. Removes all stains from porcelain bowls, traps and urinals.

Every plumber should carry K. K. to supply his trade. Good profit. Order now from your jobber.

Manufactured by
The Chamberlain Company
Manufacturing Chemists **Pittsburgh, Pa.**

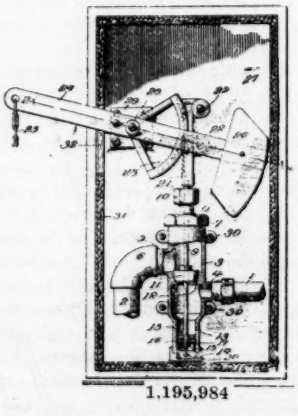
Use "DESOLVO" for clearing clogged Pipes
Works like magic. Ask your jobber.

Patents

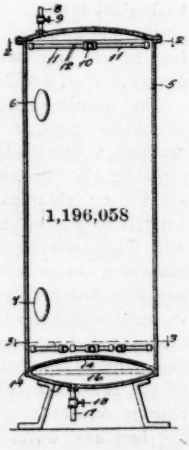
Plumbing Department.

1,195,984. Flushing-Valve. Alexander Feleki, New York, N. Y. In a device for the purpose set forth, the combination of a casing provided with an inlet and an outlet and an internal valve seat between the inlet and the outlet, the lower portion of said casing being reduced, a piston rod disposed axially in the casing and extending through the upper end thereof, a valve on said rod adapted to engage said valve seat, a retarding piston on the lower end of said rod playing in the reduced lower portion of the casing, a rack bar rigid with the upper end of the piston rod, a lever fulcrumed intermediate its ends at one side of the piston rod, and a segmental gear meshing with the rack bar and fixed to the lever with its pivot concentric with the fulcrum of the lever, the lever extending beyond the rack bar and being provided at its inner end with a counterbalance and at its outer end with an operating medium.

1,196,058. Water-Softening Filter. George H. Widner, Des Moines, Iowa, assignor to Des Moines Refining Company, Des Moines, Iowa, a Corporation of Iowa. A water softening filter comprising a receptacle, a perforated plate spanning said receptacle adjacent the bottom thereof, means for conducting softened water from the space beneath the perforated plate, a mass of water softening material upon said perforated plate and a water supply means above said mass of material, said water supply means comprising a plurality of horizontally disposed pipes extending over the major portion of the area of the receptacle and transversely slotted to provide orifices that are disposed away from the mass of water softening material.



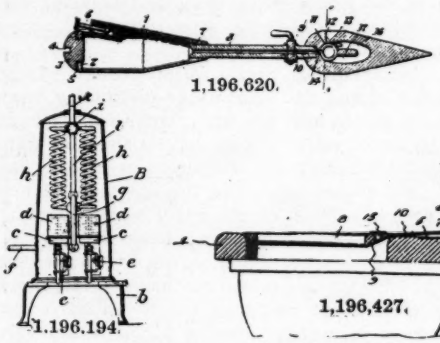
1,195,984



1,196,620. Soldering-Iron. Ollie A. Walker, Cleveland, Ohio. A device of the class described including a fuel container, a pressure pump communicating with the said container, a fuel conducting tube extending from and communicating with the fuel container, a soldering tool carried by the said tube and having a vent and a combustion chamber in communication, a generating coil having one terminal communicating with the fuel conducting tube and the opposed terminal thereof in communication with the generating chamber, and a valve carried by the

fuel conducting tube and adapted to control the supply of fuel to the generating coil.

1,196,194. Water-Heater. Fred E. White and Frederick E. Hooper, Gardner, Mass., assignors to Central Oil & Gas Stove Company, Gardner, Mass. In a water heater, a casing, a pair of oil burners, a heating coil above each burner, and a flattened water supply section extending between the burners and subjected to the radiated heat therefrom, said section having connections with the coils to supply the same with water which has been preliminarily heated in said flattened section, substantially as described.

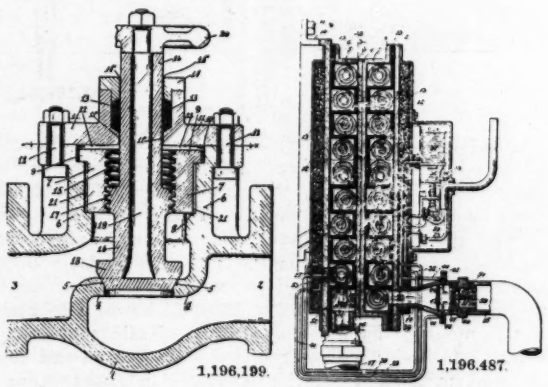


1,196,620.

1,196,194.

1,196,427.

1,196,427. Toilet-Seat. Floyd H. Brandenburg, Klamath Falls, Ore. A device of the class described comprising a fixed member, a toilet seat hingedly connected to the fixed member, a cover hingedly connected to the pintle of the hinge between the seat and fixed member, a frame comprising an elliptical body, an arm formed on said body, said arm being hingedly connected to the said pintle, a smaller seat fitted in said frame, said cover provided on its inner face with an elliptical groove terminating at its lower end into a recess which extends through the hinge end of said cover; a catch arranged in said groove, said frame and smaller seat adapted to be fitted into said groove and held securely therein when not in use, substantially as described.



1,196,199.

1,196,487.

1,196,199. Valve. Frank Baird, Berkeley, Cal., assignor to Pacific Foundry Company, San Francisco, Cal., a Corporation of California. A valve comprising a shell formed with an inlet and an outlet passage and an intervening port; a nut locked in the shell against rotation on its axis, and having clearances in its seat adapting it for lateral rocking movement in all planes; a port-controlling head having a stem rigid therewith, said stem being threaded through the nut for lineal movement and adapted to rock therewith; a bonnet secured to the shell and through which the stem of the port controlling head

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Reaching for More

¶ This is the heading of what may be considered the latest chapter in that industrial romance—the increasing use of "NATIONAL" Pipe—which appeared on pages 10 and 11 of the September 2nd issue.

¶ If by misfortune you missed seeing this, don't let it escape your attention. Turn to it now, even if you did read it before!

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PRICE—QUALITY—SERVICE
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ELECTRIC HOUSE PUMPS and RESIDENCE WATER SUPPLY SYSTEMS
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The R. & F. Hot Water Generator

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The A. L. BALL COCK overcomes the disadvantages of many so-called noiseless ball cocks, in that it works perfectly on low pressures and where frequent flushing is required. This feature, in itself, appeals to the practical plumber.

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It will pay you.

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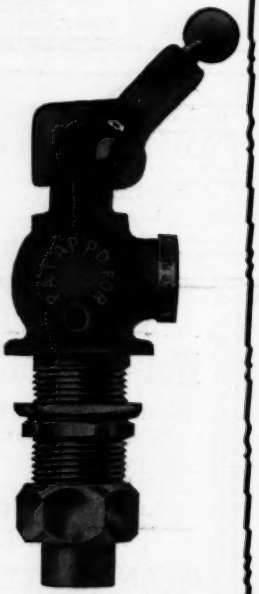


Submerged Pattern

Exeter Brass Works

Sole Manufacturers

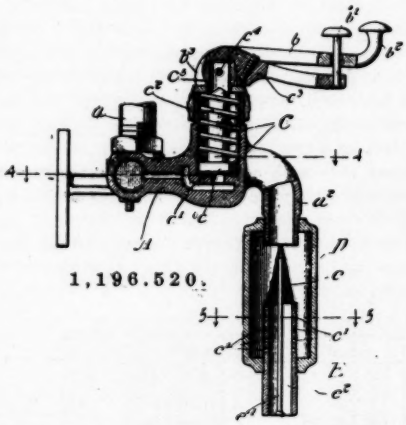
Exeter - New Hampshire

N. Y. Office—48 Cliff St., Henry Stein, Rep.

passes with clearances providing for its rocking movement; and packing confined in the bonnet about said stem and serving as the fulcrum upon which the stem rocks.

1,196,487. Electric Water-Heater. Maurice Simon, St. Louis, Mo. An electric water heater comprising a heating chamber, a partition plate in said chamber forming a tortuous passage for the flow of the water therethrough, a resistance circuit comprising a stretch of resistance wire formed in coils and mounted in said passage, a main circuit for energizing said resistance circuit, and electrically controlled means under the influence of pressure in the heater for making and breaking said electrical circuit for supplying said resistance circuit, substantially as specified.

1,196,520. Instantantous Steam Water-Heater. James M. Chadwick, Chicago, Ill. Apparatus for mixing steam with running water to heat the latter, comprising a steam valve, a cold water valve, a main handle for said water valve, a secondary handle for said steam valve, said handles being interconnected to cause the operation of both by merely pressing down on the main handle, separate passages leading to said valves, and means to discharge the mixture formed when both valves are open, said interconnection having some lost motion to permit opening of the water valve ahead of the steam valve, and said lost motion permitting opening of the steam valve alone when the secondary handle only is depressed.



1,196,520.

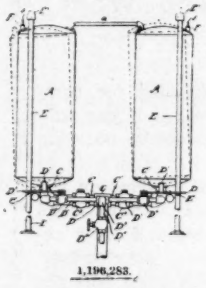
1,196,542.

1,196,542. Sanitary Drinking-Fountain and Faucet. Delbert L. Harden, Eugene, Ore. In a combined drinking fountain and faucet, the combination with suitable pump mechanism, of a hollow upright stand; a basin formed upon the top of said stand; a supply pipe leading from said pump mechanism into said basin; a pressure reservoir connected into said supply pipe intermediate said pump mechanism and said basin; a fountain nozzle mounted upon the upper end of said supply pipe within said basin; a discharge pipe leading from said supply pipe to a point exterior to said stand; means operable to direct water to either said nozzle or said discharge pipe; an overflow reservoir formed at the base of said stand and having an opening communicating with the interior thereof; and a pipe leading from said basin to said reservoir.

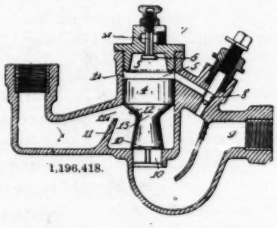
Heating Department.

1,196,283. Steam-Trap. Thomas G. Rakestraw, Detroit, Mich. In an apparatus of the character described, a suitable frame including spaced uprights, a pair of tilting receiving tanks connected together and supported upon trunnions that they may tilt as a single unit, each tank having

a relief valve and each upright having a lateral projection extending over the respective tank, suitable pipe connections to convey water to the respective tanks, check valves controlling the delivery of water through said pipes, pipe connections leading from the tanks to a boiler, check valves controlling said last named connections, a steam pipe connection between the boiler and each of the tanks, and steam valves adapted to be automatically opened and closed to govern the alternate delivery of steam through said pipe connection with the respective tanks actuated through the tilting of the trap upon alternate delivery of the water to the respective tanks and the relief valves of the tanks being brought alternately into engagement with the respective lateral projections of said uprights to operate the relief valves.



1,196,283.



1,196,418.

1,196,418. Valve for Draining Water from Steam Pipes. Alfred Baldwin, Keighley, England. A releasing valve comprising a casing, a releasing valve for the air therein, a movable piston and a main outlet valve connected thereto, normally closed by gravity, said piston having a conical surface and a deflecting plate for diverting the flow to said surface to raise the main valve from its seat.

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Supervising Architect James A. Wetmore, Treasury Department, Washington, D. C., will receive sealed proposals for government work as follows:

Until 3 p. m., October 2, 1916, for the construction, complete, of the United States postoffice at Willows, Cal., including plumbing, heating and ventilating systems.

Until 3 p. m., October 6, 1916, for the construction, complete, including plumbing, heating and ventilating, of the United States postoffice at Skowhegan, Me.

Until 3 p. m., October 5, 1916, for the construction, complete, including plumbing, heating and ventilating, of the United States postoffice at Berlin, N. H.

Until 3 p. m., October 12, 1916, for the construction, complete, including plumbing, heating and ventilating, of the United States postoffice at Buckhannon, W. Va.

Until 3 p. m., October 16, 1916, for the construction, complete, including plumbing, heating and ventilating, of the United States postoffice at Dickinson, N. D.

Drawings and specifications may be obtained from the custodians of the different sites or at the office of the Supervising Architect, in Washington, D. C.

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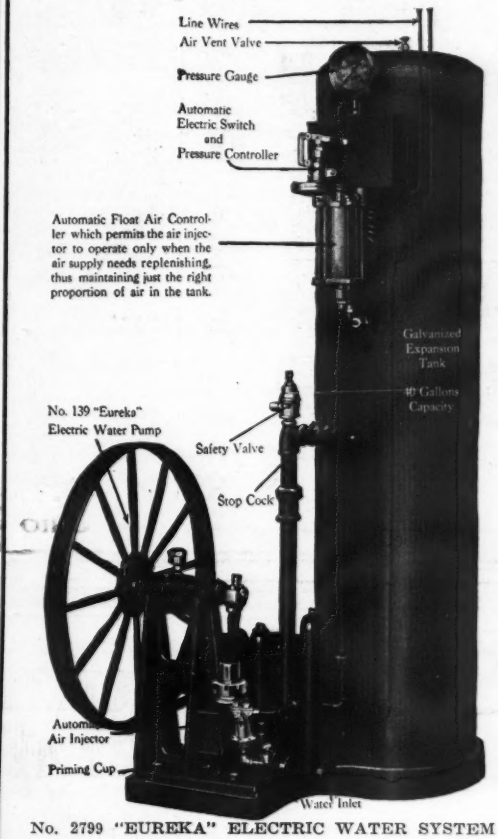
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POSITION WANTED—IN OFFICE, plumbing and heating supply house. Experienced in all branches. Best references. Address 2348, care "Domestic Engineering," Chicago. 9-9

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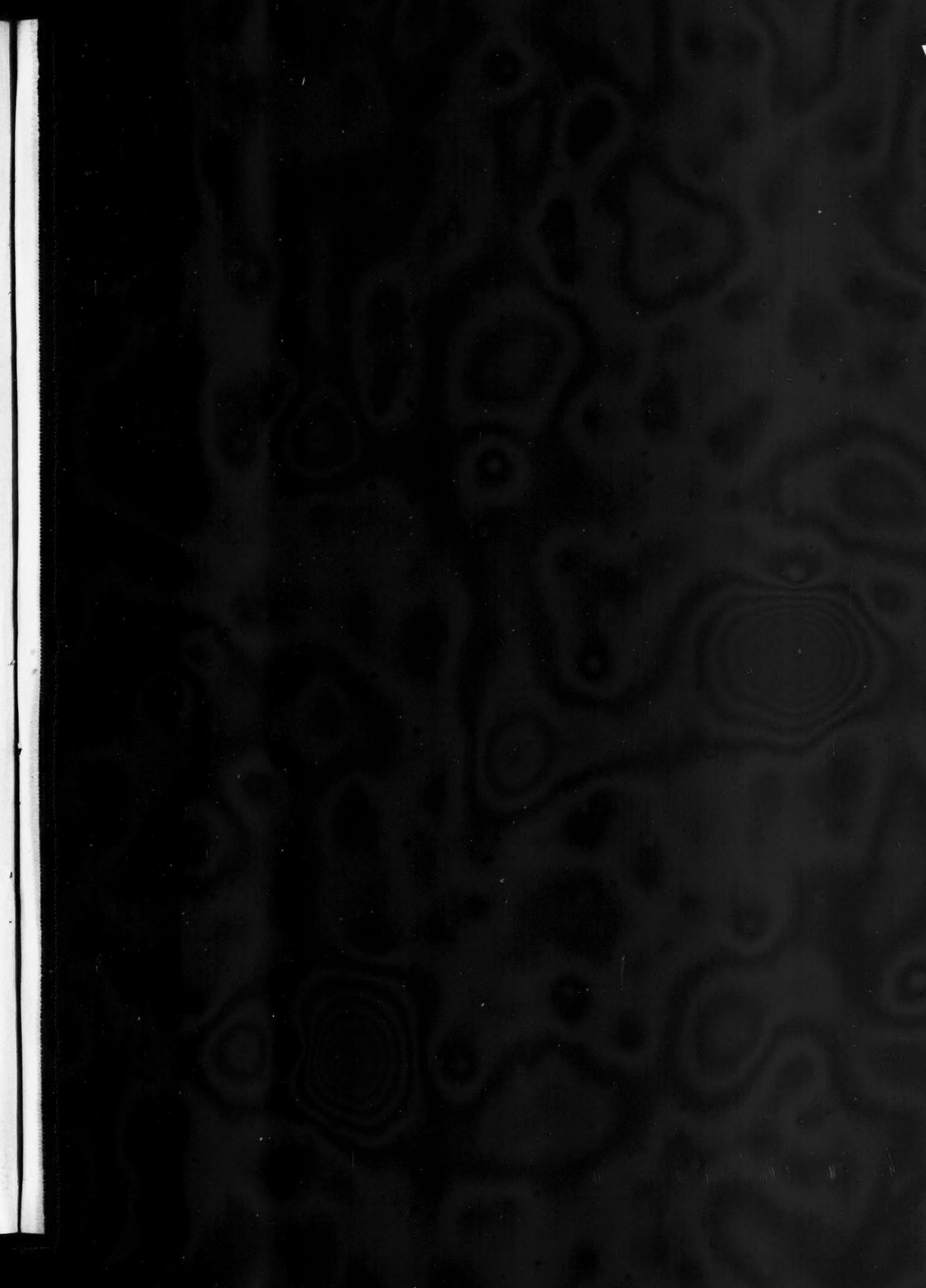
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